

# SLOVAKIA 2012 COUNTRY REPORT GLOBAL YOUTH TOBACCO SURVEY (GYTS)



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## **Foreword**

Tobacco use, particularly cigarette smoking, ranks among the most frequent preventable causes of premature loss of health and significantly contributes on premature mortality. Studying possibilities how to alleviate its adverse social and health consequences deserves adequate interest not just of public health but the whole community.

The presented report brings findings of Global Youth Tobacco Survey (GYTS) carried out in Slovakia in 2011. Valid epidemiological data are crucial for planning, implementation and evaluation of effective preventive measures. Standard methodology provides comparable and representative data on tobacco use and related factors in population of adolescents. However, these data, as indicators of impact of tobacco control measures, are relevant for the whole community and make possible to evaluate situation both in European and Global context. Repeated surveys (in Slovakia previous GYTS survey were carried out in 2003 and 2007) enable to estimate trends and anticipate development of the situation. Therefore, the presented GYTS findings and their interpretation significantly contribute to tobacco control efforts.

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## Summary

The presented report brings findings of Global Youth Tobacco Survey (GYTS) carried out in Slovakia in 2011. GYTS monitors information on prevalence of tobacco use and its initiation, attitudes, knowledge and behaviour related to tobacco use, environmental tobacco smoke (ETS) exposure both in homes and outside homes, minors' access to tobacco products, and role of advertisement and mass media as well as prevention curricula in schools in adolescents.

The GYTS is a school-based survey that uses a two-stage cluster sample design to produce representative samples of students in grades associated with the age group 13-15 years. The school response rate was 100.0% and the student response rate was 86.1%. A total of 4,696 students participated. The fieldwork was carried out from April 2011 to June 2011.

60.8% of students ever smoked cigarettes. 30.7% of them reported current use (one or more days within last 30 days) of any tobacco product, while cigarette smoking only slightly prevailed above using of other tobacco products (24.8% vs. 19.9%). 25.2% of never smokers were susceptible to initiate smoking in the next year. 31.5% of respondents expressed view that smoking boys have more friend. Among current smokers who bought cigarettes in a store, 77.8% of them were not refused because of their age. 84.9% of respondents reported to be around others smoking in places outside their home. Seeing antismoking messages on TV was reported by 63.1% of respondents, while seeing of cigarette brand names on TV 60.7% of them. 54.6% of students had been taught in class during the past year about the dangers of smoking.

Tobacco use in Slovakia is widespread and besides cigarette smoking also other tobacco products deserve attention due to increasing prevalence. Both boys and girls held almost the same attitudes towards attractiveness of smoking and adolescents in Slovakia still better accept smoking of boys than smoking of girls. Respondents consider smoking particularly as a social mediator. Although antismoking information seen on TV are rather frequent, its message has been diffused with other contradicting pro-tobacco messages, i.e. the extent of indirect tobacco advertisement, despite of gradual decline, is still high. There is a significant gap between possibilities and actual situation regarding school programs since education on tobacco in school curricula is not adequately used. The GYTS findings indicate very poor compliance with legislation banning sale of tobacco products for minors, so more effective enforcement is needed. A very high prevalence of environmental tobacco smoke outside homes showing no significant decline from 2003 indicates insufficient effect of the relevant legislation and a need for its amendment.

## **Introduction**

Tobacco use is the leading global cause of preventable death. WHO attributes nearly 6 million deaths a year to tobacco. That figure is expected to rise to more than 8 million deaths a year by 2030. Most people begin using tobacco before the age of 18 1.(World Health Organization. MPOWER. 2008)

The Global Youth Tobacco Survey (GYTS) was developed by the Tobacco Free Initiative (TFI), World Health Organization (WHO) and the Office on Smoking and Health (OSH) of the United States Centers for Disease Control and Prevention (CDC) in collaboration with a range of countries representing the six WHO regions to gather comprehensive tobacco prevention and control information on young people. The GYTS is a school-based survey that uses a two-stage cluster sample design to produce representative samples of students in grades associated with the age group 13-15 years. All classes in the selected grades were included in the sampling frame. All students in the selected classes were eligible to participate in the survey.

### ***Country Demographics***

Slovak Republic (Slovakia), situated in Central Europe, is a Member State of the WHO EURO and is considered as a high income country. The population is almost 5.5 million of people and its area is about 49 thousand square kilometers. Slovakia. Slovakia, as an independent country, has been formed by dividing of former Czechoslovakia since January 1, 1993. It became a member of the European Union on 1st of May 2004.

### ***WHO Framework Convention on Tobacco Control and MPOWER***

In response to the globalization of the tobacco epidemic, the 191 Member States of the World Health Organization unanimously adopted the WHO Framework Convention on Tobacco Control (FCTC) at the Fifty-sixth World Health Assembly in May 2003. The FCTC is the world's first public health treaty on tobacco control. It is the driving force behind, and blueprint for the global response to the pandemic of tobacco-induced deaths and diseases. The treaty embodies a coordinated, effective, and urgent action plan to curb tobacco consumption and lays out cost-effective tobacco control strategies for public policies such as banning direct and indirect tobacco advertising, increasing tobacco tax and price, promoting smoke-free public places and workplaces, displaying prominent health messages on tobacco packaging, and tobacco research, surveillance, and exchange of information.

To help countries fulfill their WHO FCTC obligations, in 2008 WHO introduced MPOWER, a technical package of six evidence-based tobacco control measures that are proven to reduce tobacco use and save lives (World Health Organization. MPOWER, 2008):

- Monitor tobacco use and prevention policies
- Protect people from tobacco smoke
- Offer help to quit tobacco use

- Warn about the dangers of tobacco
- Enforce bans on tobacco advertising, promotion and sponsorship
- Raise taxes on tobacco

The GYTS supports WHO MPOWER by monitoring country-specific data on key tobacco indicators, including prevalence, knowledge, and behavior. The final questionnaire was translated into Slovak language and back-translated into English to check for accuracy.

### ***Purpose and Rationale***

The purpose of participating in the GYTS is to enhance countries' capacity to monitor youth tobacco consumption and tobacco use initiation, guide national tobacco prevention and control programs, and facilitate comparison of tobacco-related data at the national, regional, and global levels. Results from the GYTS are also useful for documenting the changes in different variables of tobacco control measures for monitoring the implementation of different provisions of the tobacco control law and the relevant Articles of the WHO Framework Convention.

Via self-administered questionnaire GYTS monitors information on prevalence of tobacco use and its initiation, attitudes, knowledge and behaviour related to tobacco use, environmental tobacco smoke (ETS) exposure both in homes and outside homes, minors' access to tobacco products, and role of advertisement and mass media as well as prevention curricula in schools. Target group of the survey is adolescents aged 13-15 years. The information obtained from the survey is of a great importance in planning of effective measures in tobacco control.

Standard methodology and uniform questionnaire used in GYTS enables valid cross-country comparisons and repeated surveys can reliably monitor a dynamics of tobacco epidemics as well as sensitively identify changes over time as results of implemented tobacco control measures.

In Slovakia, three rounds of the GYTS were carried out yet now: the first one in 2003, the second in 2007 and the last one in 2011.

In European region one half of all people who regularly smoke die from tobacco-related diseases, half in middle age and half in old age. Situation in Central and Eastern Europe countries is particularly urgent. Middle-aged men here are in two times higher risk of death from tobacco-related disease than men in Western Europe (The European health report, 2005). Slovakia ranks among countries with relatively high prevalence of tobacco use. According to relevant estimations of the WHO (WHO Report on the Global Tobacco Epidemic, 2009) in adult population males clearly dominate (41%) above females (20%). Almost half of regular smokers in Slovakia smoke 10 and less cigarettes per day (44% of smokers), 41% of smokers smoke 11-20 cigaretted per day and minority of smokers consume more than 20 cigarettes daily (13%) (Prevalencet of use of addictive drugs in Slovakia..., 2006).

Tobacco smoking represents in Slovakia the second most frequent cause of death and premature loss of health contributing in 19.2% of all deaths and 12.2% of DALYs. Life expectance in smokers in Slovakia is reduced in average by 16 years (The European health report, 2005; Peto et al., 2006).

The previous GYTS surveys in Slovakia did not indicate decreasing trend in any aspect of tobacco use in schoolchildren. Moreover, relative increase of proportion of girls susceptible to smoking was observed. The surveys also found insufficient use of school-based tobacco control programs, even decreased after 2003. Although prevalence of environmental tobacco smoke in

homes decreased in certain level, no change was observed in passive smoking within studied period. This indicates insufficient legislation regarding smoke-free environment. Indirect pro-tobacco advertisement and tobacco industry sales promotion activities decreased between 2003 and 2007 indicating that recently implemented measures in this field were at least partially effective. On the other hand, prevalence of positive reports on indirect pro-tobacco mass-media advertisement was still very high.

### ***Current State of Policy***

Tobacco use in Slovakia is regulated by several legal measures. The most important are:

The Act No. 377/2004 Coll. On Protection of Non-smokers as amended<sup>1</sup> that lays down rules of sale and distribution of tobacco products as well as determines smoke free-areas. According to this measure, tobacco products are forbidden to be sold in buffets and canteens within school facilities, playgrounds, health-care and social facilities; in automatic machines and collected on delivery; and in a package of less than 10 pieces. Tobacco products are forbidden to be sold for those younger than 18 years. Further it gives rulings on labeling of packs of tobacco products in accordance with directives of the European Communities. Under the terms of this Act it is prohibited to smoke in all health-care facilities, any type of schools including universities, governmental and public administration offices, cultural and sport facilities, means of public transportation, railway platforms, stations and stops. The Act also prohibits smoking in facilities of mass caterer (restaurants, canteens, buffets etc.) and groceries.

From the reason to ensure higher protection of non-smoking workers, in Slovakia has been passed new Act No. 124/2006 Coll. on Safety and Protection of Health at the Work as amended<sup>2</sup>. The Act enacts a responsibility of any employer to ban tobacco smoking at workplaces, at which also non-smokers work.

Legal measures determining pricing of tobacco products and thereby preventing the smoking initiative and tobacco use by minors, belongs to the most effective. Since the membership of the Slovak Republic in the European Union that became in 1st of May 2004 it is obliged to observe directives and regulations according to the European Union Accession Treaty. The Act No. 106/2004 Coll. On Excise Duty of Tobacco Products as amended<sup>3</sup>, harmonizes enacted tax of cigarettes and other tobacco products with the European Communities directive.

The Act No. 147/2001 Coll. On Advertising as amended<sup>4</sup> prohibits the advertisement of tobacco products in any types of information carriers; through the free distribution of tobacco products samples to the public; and on advertising items, that are not relating to smoking and are distributed to the public, with the exception of advertising things distributing at the selling points. The Amendment 525/2005 Coll extends the prohibition to a sponsoring by tobacco producers and distributors.

The Act No. 308/2000 Coll. On Transmission and Retransmission as amended<sup>5</sup> does not permit any forms of advertisement and teleshopping for tobacco products in all electronic media.

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<sup>1</sup> Act No. 465/2005 Coll., Act 87/2009 Coll.

<sup>2</sup> Act No. 309/2007 Coll.

<sup>3</sup> Act No 556/2004 Coll., Act No. 631/2004 Coll., Act No. 533/2005 Coll., Act No. 610/2005 Coll. and Act No.547/2007 Coll..

<sup>4</sup> Act No. 23/2002 Coll., Act No. 525/2005 Coll., Act No. 282/2006 Coll., Act. No.342/2006 Coll., Act No. 102/2007 Coll. and Act No. 648/2007 Coll.

<sup>5</sup> Act No. 147/2001 Coll., Act No. 206/2002 Coll., Act No. 289/2005 Coll., Act No. 95/2006 Coll., Act No. 121/2006 Coll., Act No. 13/2007 Coll., Act No.220/2007 Coll., Act No. 654/2007 Coll. and A ct No. 343/2007 Coll.



Summarising, Slovak tobacco control legislation achieved rather high level of legal health protection of children and youth as well as of non-smokers in general. However, the legislation only partially ensures smoke-free environment.

### ***Other Tobacco Surveys***

The GYTS has previously been conducted in Slovakia in 2002 and 2007. In addition to the GYTS, the following surveys have been run in Slovakia: Global Health Professional Students Survey in 2006 and 2010 and Global School Personnel Survey in 2003.

### ***Country Specific Objectives***

Considering the specific situation in Slovakia in context of the GYTS findings, the following objectives appear as significant:

- To reduce prevalence of environmental tobacco smoke outside homes from 84.9 % in 2011 to a significantly different lower prevalence in the next GYTS round (in 2015), and to achieve a declining trend in the further GYTS rounds.
- To increase occurrence of positive answers regarding school curricula from percentage found in 2011 to a significantly different higher level in the next GYTS round (in 2015) in all studied indicators.
- To reduce percentage of current smokers who bought their cigarettes in shops and were not refused because of their age from 77.8% in 2011 to a significantly different lower occurrence in the next GYTS round (in 2015), and to achieve a declining trend in the further GYTS rounds.

## **Methods**

### ***Sampling***

The 2011 Slovakia GYTS is a school-based survey, which employed a two-stage cluster sample design to produce a national representative sample of students in grades associated with the ages 13-15 years. In Slovakia, the 2011 sample frame included grades 7-9 in elementary schools and 3-5 in eight years study grammar schools. At the first stage, 60 schools were selected with probability proportional to enrollment size (a complete list of all schools with enrolment data were obtained from the Office of School Information and Prognosis, Ministry of Education of the Slovak Republic).

At the second sampling stage, classes within the selected schools were randomly selected. All students attending the school the day the survey was administered in selected classes were eligible to participate. The school response rate was 100.0% and the student response rate was 86.1%. A total of 4,696 students participated from 5,505 eligible ones. 3,957 were ages 13 to 15 years (Male: 1912, Female: 1976).

### ***Data Collection***

Data collection took place from April 2011 to June 2011. The fieldwork was carried out by 23 trained field administrators from Regional Public Health Authorities.

Survey procedures were designed to protect the students' privacy by allowing for anonymous and voluntary participation. The self-administered questionnaire was administered in the classroom. Students were informed by field administrators about the purpose of the survey and about an appropriate way how to administrate the survey and recorded their responses directly on an answer sheet that could be scanned by a computer . Standard GYTS questionnaire adopted for Slovakia contained 88 multi-choice questions. The survey included 70 original questions from the core questions and 18 either from core questions modified to reflect local context or the optional questions available.

To compare GYTS results from 2007 and 2003, only students having 13-15 years were selected for the analysis.

### ***Data Analysis***

A weighting factor was applied to each student record to adjust for non-responses and variation in the probability of selection at the school, class, and student levels. SUDAAN, a software package for statistical analysis of complex survey data(Shah et al., 1997), and EPI INFO were used to calculate weighted prevalence estimates and standard errors (SE) of the estimates (95% confidence intervals [CI] were calculated from the SEs).

Frequency tables for each survey question are developed which show the number of cases, percentage, and the 95% confidence interval. Preferred tables are also developed highlighting the questions that are considered key tobacco control indicators from the GYTS. Indicators are in accordance with the WHO FCTC and MPOWER technical package.

Statistical tests for difference were determined by comparing the range of 95% confidence intervals for each estimate, at the  $p=0.05$  level.

## **Results**

### ***Prevalence – Article 20 of WHO FCTC: Research, Surveillance and Exchange of Information***

Table 1: Percent of students who use tobacco, GYTS Slovakia, 2011

Category	Ever smoked cigarettes % (95% CI)	Current Any Tobacco Users % (95% CI)	Current Cigarette Smokers % (95% CI)	Current Other Tobacco Users % (95% CI)	Never Smokers Susceptible to Start Smoking in the Next Year % (95% CI)
Total	60.8 (57.2 - 64.3)	30.7 (27.8 - 33.7)	24.8 (21.8 - 28.0)	19.9 (17.4 - 22.6)	25.2 (23.2 - 27.3)
Male	62.8 (58.9 - 66.6)	30.9 (27.7 - 34.3)	24.4 (21.4 - 27.6)	20.9 (17.9 - 24.2)	23.1 (20.3 - 26.2)
Female	57.4 (52.9 - 66.6)	28.8 (25.1 - 32.7)	24.2 (20.3 - 28.6)	17.00 (14.6 - 19.8)	27.0 (24.0 - 30.3)

In Slovakia, about 6 in 10 students (60.8%) ever smoked cigarettes. Less than one third (30.7%) of students reported current use (one or more days within the last 30 days) of any tobacco products. Among them, current cigarette smokers prevailed (24.8% of all respondents) slightly above current users of other tobacco products (19.9%), however, not significantly. About one quarter of never smokers are susceptible to start smoking in the next year. No statistically significant gender differences were found in the indicators (Table 1).

### ***Knowledge and Attitudes – Article 12 of WHO FCTC: Education, Communication, Training and Public Awareness***

Table 2 Knowledge and attitudes GYTS Slovakia, 2011

Category	Percent who think boys who smoke have more friends (95% CI)	Percent who think girls who smoke have more friends (95% CI)	Percent who think boys who smoke are more attractive (95% CI)	Percent who think girls who smoke are more attractive (95% CI)
Total	31.5 % (29.1 - 34.0)	21.0 % (18.6 - 23.7)	15.3 % (13.6 - 17.2)	9.8 % (8.4 - 11.4)
Male	31.9 % (28.9 - 35.2)	22.4 % (19.0 - 26.1)	17.5 % (15.4 - 19.9)	10.8 % (9.1 - 12.8)
Female	30.6 % (27.4 - 34.0)	19.6 % (17.0 - 22.6)	12.0 % (10.0 - 14.3)	8.0 % (6.6 - 9.6)

3 in 10 students reported (31.5%) that boys and 2 in 10 (21.0%) that girls who smoke have more friends. Male respondents significantly more frequently than female respondents (17.5% vs. 12.0%) think boys who smoke are more attractive and about 1 in 10 of all respondents (9.8%; no significant gender difference) think girls who smoke are more attractive (Table 2).

***Access and Availability – Article 20 of WHO FCTC: Research, Surveillance and Exchange of Information***

**Table 3 Access and availability, GYTS Slovakia, 2011**

Category	Percent of current smokers who usually smoke at home (95% CI)	Percent of current smokers who buy cigarettes in a store (95% CI)	Percent of current smokers who bought cigarettes in a store in the past 30 days who were NOT refused because of their age (95% CI)
Total	56.0 (46.3 – 67.7)	47.3 (42.9 – 51.7)	77.8 (73.3 – 81.8)
Male	51.6 (37.7 – 65.5)	46.9 (41.4 – 52.4)	71.5 (63.6 – 78.2)
Female	63.6 (51.0 – 76.2)	47.0 (39.3 – 54.8)	83.5 (78.5 – 87.5)

Of current smokers, more than a half of them (56.0%) usually smoke at home, 47.3 % of them buy cigarettes in a store (Table 3). Almost 8 in 10 of current smokers who bought cigarettes in a store were not refused purchase because of their age, while females significantly dominated above males (83.5% vs. 71.5%).

***Secondhand Smoke***

**Table 4 - Article 8 of WHO FCTC:-Protection from Exposure to Tobacco Smoke, GYTS Slovakia, 2011**

Category	Percent who are exposed to smoke from others at home within recent 7 days (95% CI)	Percent who are around others who smoke in places outside their home within recent 7 days (95% CI)	Percent who are around others who smoke in places outside their home (95% CI)	Percent who think smoking should be banned from public places (95% CI)
Total	45.2 (42.1 – 48.2)	72.3 (10.3 – 74.1)	84.9 (83.5 – 86.2)	79.3 (77.1 – 81.2)
Male	43.8 (39.8 – 47.9)	70.5 (68.0 – 73.0)	83.8 (82.0 – 85.4)	80.2 (77.8 – 82.4)
Female	45.7 (42.6 – 48.9)	74.1 (71.1 -77.0)	86.2 (84.1 – 88.0)	79.0 (76.2 – 81.5)

**Table 5 – Article 12 of WHO FCTC: Education, Communication, Training and Public Awareness, GYTS Slovakia, 2011**

Category	Percent who think smoke from others is harmful to them (95% CI)	Percent who have one or more parents who smoke (95% CI)	Percent who have most or all friends who smoke (95% CI)
Total	72.4 % (70.3 - 74.5)	47.9 % (44.8 - 51.0)	24.4 % (21.5 - 27.7)
Male	72.8 % (70.2 - 75.3)	46.5 % (43.0 - 50.1)	23.0 % (19.8 - 26.7)
Female	72.6 % (70.0 - 75.1)	49.3 % (45.4 - 53.2)	25.7 % (21.8 - 29.9)

Of the students that participated in the survey, almost half of them (45.2%) live in homes where others smoke. More than 7 in 10 of them (72.3%) are around others who smoke in places outside their home (within recent 7 days).-Regarding environmental tobacco smoke; almost 8 in 10 of respondents (79.3%) think that smoking should be banned from public places (Table 4). About 7 in 10 of students (72.4%) think smoke from others is harmful to them.-In their personal lives, almost half (47.9%) of students reported they have one or more parents who smoke, and about

one quarter of them (24.4%) report having most or all friends who smoke (Table 5). Considering secondhand smoking indicators, no significant gender differences were found.

### ***Cessation – Article 14 of WHO FCTC: Demand Reduction Measures Concerning Tobacco Dependence and Cessation***

Table 6. Smoking cessation and its promotion, GYTS Slovakia, 2011

Category	Percent of current smokers who want to stop smoking (95% CI)	Percent of current smokers who tried to stop smoking during the past year (95% CI)	Percent of current smokers who have received help to stop smoking (95% CI)
Total	64.8 % (59.8 - 69.5)	75.7 % (72.2 - 79.0)	63.8 % (59.2 - 68.1)
Male	64.9 % (59.1 - 70.3)	74.3 % (69.1 - 78.9)	65.5 % (54.7 - 69.9)
Female	66.1 % (59.0 - 72.5)	77.6 % (72.4 - 82.0)	61.1 % (54.7 - 67.0)

Of current smokers, about 6 in 10 (64.8%) reported that they want to stop smoking, and three quarters of them (75.7%) tried to stop smoking within the past year. Regarding cessation attempts, about 6 in 10 (63.8%) of current smokers report that they have received help to stop smoking. No gender differences were found in the above described indicators (Table 6).

### ***Media and Advertising – Article 13 of WHO FCTC: Tobacco Advertising, Promotion and Sponsorship***

Table 7. Tobacco in mass media, GYTS Slovakia, 2011

Category	Percent who saw Anti-Smoking Media Messages on Television (95% CI)	Percent who have seen any cigarette brand names when watching TV (95% CI)	Percent who have seen pro-cigarette ads in newspapers or magazines in the past 30 days (95% CI)
Total	63.1 (61.1 – 65.1)	60.7 (58.8 – 62.6)	63.2 (61.1 – 65.3)
Male	64.3 (61.7 – 66.8)	62.9 (60.4 – 65.3)	64.2 (60.9 – 67.4)
Female	61.2 (58.6 – 63.7)	58.0 (55.5 – 60.5)	63.0 (60.7 – 65.1)

In the past 30 days, about 6 in 10 (63.1%) respondents saw anti-smoking media messages on TV (Table 7). However, about the same percentage of them reported to see any cigarette brand names when watching TV (60.7%), and pro-cigarette ads in newspapers or magazines (63.2%).

Table 8. Promotion of tobacco product, GYTS Slovakia, 2011

Category	Percent who have an object with a cigarette brand logo (95% CI)	Percent who were offered free cigarettes by a tobacco company representative (95% CI)
Total	16.2 (14.2 – 18.4)	7.8 (6.3 – 9.7)
Male	19.5 (16.8 – 22.4)	10.2 (7.9 – 13.1)
Female	12.2 (10.6 – 14.0)	4.4 (3.3 – 5.8)

More boys than girls reported to have an object with a cigarette brand logo (19.5% vs. 12.2). Similarly, boys were more frequently than girls (10.2% vs. 4.4%) have been offered free cigarettes by a tobacco country representative (Table 8).



***School Curriculum – Article 12 of WHO FCTC: Education, communication, training and public awareness***

Table 9. School curriculum, GYTS Slovakia, 2011

Category	Percent who had been taught in class during the past year about the dangers of smoking (95% CI)	Percent who had discussed in class during the past year reasons why people their age smoke (95% CI)	Percent who had been taught in class during the past year the effects of smoking (95% CI)
Total	54.6 (50.5 - 58.6)	46.3 (42.5 - 50.2)	45.5 (41.7 - 49.3)
Male	54.5 (50.1 - 58.8)	46.1 (41.9 - 50.3)	45.3 (41.1 - 49.5)
Female	55.4 (50.6 - 60.1)	46.5 (41.9 - 51.2)	45.9 (41.4 - 50.4)

In the past year, about half of students (54.6%) had been taught in class about the dangers of smoking, slightly less of them (46.3%) had discussed in class why people their age smoke, and about the same percent (45.5%) of them had been taught in class about the effects of smoking (Table 9).

***Comparison to Previous GYTS surveys***

Table 10. Prevalence – SLOVAKIA 2003, 2007 and 2011 (13-15 Years ONLY) (percentage and confidence interval 95%)

		2003	2007	2011
Ever smoked cigarettes	Total	66.5 (64.1 - 68.8)	64.4 (61.5 - 67.2)	59.8 (56.1 – 63.4)
	Male	72.0 (69.3 - 74.5)	68.7 (65.4 - 71.9)	62.0 (58.0 – 65.9)
	Female	60.8 (57.6 - 64.0)	60.2 (56.4 - 63.8)	56.8 (52.1 – 61.3)
Ever smokers, first smoked cigarettes before age 10	Total	28.8 (25.9 - 31.8)	28.8 (26.4 - 31.2)	19.9 (17.6 – 22.4)
	Male	35.1 (31.5 - 38.8)	34.9 (31.5 - 38.5)	24.6 (21.6 – 27.9)
	Female	21.1 (17.8 - 24.9)	21.8 (19.1 - 24.8)	13.4 (10.5 – 16.8)
Current* cigarette smoker	Total	26.4 (24.3 - 28.7)	25.0 (22.6 - 27.6)	23.5 (20.5 – 26.7)
	Male	28.1 (25.1 - 31.4)	26.5 (23.2 - 29.9)	23.2 (19.9 – 26.8)
	Female	24.3 (22.0 - 26.8)	23.4 (20.7 - 26.4)	23.0 (19.1 – 27.4)
Current* user of other tobacco products	Total	13.1 (11.6 - 14.7)	12.9 (11.6 - 14.4)	18.4 (16.0 – 21.0)
	Male	14.7 (12.4 - 17.5)	15.1 (13.5 - 16.9)	19.5 (16.4 – 22.9)
	Female	11.2 (9.6 - 13.0)	10.6 (9.1 - 12.3)	16.1 (13.7 – 18.8)
Never smokers likely to initiate smoking in the next year	Total	24.7 (21.2 - 28.5)	24.5 (21.4 - 27.9)	25.5 (23.3 – 28.0)
	Male	21.5 (17.4 - 26.3)	17.7 (14.6 - 21.4)	22.9 (20.0 – 26.1)
	Female	26.4 (21.7 - 31.8)	29.5 (24.8 - 34.6)	27.6 (24.2 – 31.2)

\*current smoking is defined as smoking one or more days during the past 30 days

Percentage of ever smokers showed in 2011 certain decline compared to 2003 (from 66.6% to 59.8%). Between 2007 and 2011, prevalence of ever smokers first smoked cigarettes before age 10 dropped significantly both in boys and girls, however boys remained dominating above girls (from 34.9% to 24.6% and from 21.8% to 13.4%, respectively). Although percentage of current cigarette smokers indicates a slight decline within given period, changes did not reach statistical significance. On the other hand, prevalence of current users of other tobacco products significantly increased within 2007 and 2011 years (from 12.9% to 18.4%), namely among girls (from 10.6% to 16.1%) so that significant dominance of boys seen in 2007, disappeared in 2011. Proportion of never smokers susceptible to initiate smoking did not show significant changes (Table 10).

Table 11. Exposure to tobacco smoke - SLOVAKIA 2003, 2007 and 2011 (13-15 Years ONLY) (percentage and confidence interval 95%)

		2003	2007	2011
One or more parents smoke	Total	55.1 (52.7 - 57.4)	49.9 (47.3 - 52.5)	47.7 (44.6 - 50.7)
	Male	53.7 (50.8 - 56.5)	46.6 (44.1 - 49.1)	46.5 (42.8 - 50.2)
	Female	56.2 (53.4 - 58.9)	52.6 (49.3 - 55.9)	48.9 (44.8 - 52.5)
All or most best friends smoke	Total	24.1 (21.9 - 26.3)	23.5 (21.1 - 26.1)	23.1 (20.1 - 26.4)
	Male	23.5 (21.0 - 26.1)	22.7 (19.6 - 26.0)	22.2 (18.7 - 26.1)
	Female	24.6 (21.2 - 28.3)	23.7 (21.0 - 26.7)	24.2 (20.5 - 28.2)
Exposed to tobacco smoke in home	Total	79.5 (77.1 - 81.7)	74.5 (72.2 - 76.7)	61.8 (59.0 - 64.6)
	Male	79.0 (76.6 - 81.2)	72.5 (69.9 - 75.0)	60.8 (57.0 - 64.6)
	Female	79.8 (76.8 - 82.4)	76.2 (73.4 - 78.8)	62.9 (60.0 - 65.8)
Exposed to tobacco smoke outside home	Total	85.7 (84.5 - 86.9)	86.7 (85.2 - 88.0)	85.1 (83.5 - 86.5)
	Male	85.2 (83.3 - 87.0)	85.6 (83.9 - 87.2)	84.2 (82.2 - 86.0)
	Female	86.2 (83.7 - 88.3)	87.6 (85.3 - 89.6)	86.0 (83.6 - 88.0)
In favor of banning smoking in public places	Total	75.6 (73.4 - 77.6)	80.7 (79.1 - 82.2)	80.2 (78.3 - 82.0)
	Male	75.5 (72.6 - 78.2)	80.5 (78.5 - 82.3)	81.0 (78.6 - 83.2)
	Female	76.1 (72.5 - 79.4)	81.1 (78.9 - 83.2)	79.8 (77.1 - 82.3)

Decreased percentage of respondents having one or more parents smoking seen between 2003 and 2007 did not changed significantly between 2008 and 2007. Percentage of those reporting to have all or most best friends smoking did not change significantly within studied period. Prevalence of exposure to tobacco smoke in homes has shown regularly decreasing trend (from 79.5% in 2003 to 61.8% in 2011). On the other hand, exposure outside home has remained almost unchanged. Percentage of respondents being in favor of banning smoking in public places did not changed in 2011 survey (Table 11).

Table 12. School - SLOVAKIA 2003, 2007 and 2011 (13-15 Years ONLY) (percentage and confidence interval 95%)

		2003	2007	2011
During this school year, were taught in any classes about the dangers of smoking	Total	70.0 (66.8 - 73.1)	58.1 (54.3 - 61.9)	54.9 (50.7 - 59.0)
	Male	67.8 (64.2 - 71.2)	56.4 (52.4 - 60.3)	54.1 (49.6 - 58.6)
	Female	72.9 (69.1 - 76.3)	60.2 (55.6 - 64.6)	55.9 (51.1 - 60.6)
During this school year had discussed in class, during year, reasons why people their age smoke	Total	57.2 (54.5 - 59.8)	48.9 (45.0 - 52.9)	45.8 (41.8 - 49.9)
	Male	55.3 (52.1 - 58.4)	46.2 (42.5 - 50.0)	45.2 (40.6 - 49.7)
	Female	59.4 (56.5 - 62.3)	52.0 (47.0 - 56.9)	46.6 (41.6 - 49.7)

Percentage of those reporting teaching about the dangers of smoking and discussing reasons why people their age smoke in their classes did not changed significantly in 2011 and remained similar to situation in 2007 (Table 12).



Table 13. Media/Advertising - SLOVAKIA 2003, 2007 and 2011 (13-15 Years ONLY)  
(percentage and confidence interval 95%)

		2003	2007	2011
During the past month saw any anti-smoking messages on TV	Total	64.3 (62.1 – 66.4)	71.9 (69.6 – 74.0)	62.2 (60.2 – 64.3)
	Male	66.8 (64.0 – 69.5)	73.2 (70.0 – 76.2)	63.4 (60.8 – 66.0)
	Female	61.7 (59.0 – 64.3)	70.6 (67.9 – 73.2)	60.6 (57.9 – 63.3)
During the past month saw any cigarette brand names on TV	Total	78.0 (76.4 – 79.6)	66.4 (64.6 – 68.1)	59.8 (57.8 – 61.8)
	Male	80.2 (78.6 – 81.8)	71.2 (68.6 – 73.6)	62.0 (59.4 – 64.6)
	Female	75.8 (73.4 – 78.0)	62.0 (59.6 – 64.2)	57.3 (54.8 – 59.8)
During the past month saw any advertisements or promotions for cigarettes in newspapers or magazines	Total	75.0 (73.1 - 76.8)	67.3 (65.1 - 69.4)	62.7 (60.6 – 64.8)
	Male	75.4 (73.5 - 77.2)	68.2 (65.4 - 71.0)	63.5 (60.0 – 66.9)
	Female	74.5 (71.5 - 77.3)	66.6 (63.6 - 69.5)	62.4 (59.9 – 64.9)
Have an object (t-shirt, pen, backpack, etc) with a cigarette brand logo on it	Total	26.2 (23.9 - 28.5)	17.3 (16.0 - 18.7)	14.8 (12.9 – 16.8)
	Male	29.1 (26.7 - 31.6)	21.1 (18.8 - 23.6)	17.9 (15.2 – 20.9)
	Female	23.2 (19.8 - 26.8)	13.6 (11.9 - 15.4)	11.3 (9.7 – 13.1)

Percentage of students reporting to see anti-smoking messages on TV decreased in 2011 (from 71.9% in 2007 to 62.2% in 2011) to a similar level as in 2003 (64.3%). Seeing cigarette brand names on TV has shown regularly decreasing trend within the studied period (from 78.0% in 2003 to 59.8%). Percentage of those reporting to see any advertisements or promotions for cigarettes in newspapers or magazines as well as to have an object with a cigarette brand logo on, after the significant drop in 2007, also slightly decreased in 2011, however, not significantly compared to 2007. These changes held for both boys and girls (Table 13).

Table 14. Access - SLOVAKIA 2003, 2007 and 2011 (13-15 Years ONLY) (percentage and confidence interval 95%)

		2003	2007	2011
Current smokers who usually buy their cigarettes in a store were <b>not</b> refused purchase because of their age	Total	80.3 (73.8 - 85.6)	85.0 (81.3 - 88.1)	78.6 (73.1 – 83.2)
	Male	76.7 (68.5 - 83.3)	82.8 (77.0 - 87.4)	71.9 (63.1 – 79.3)
	Female	83.9 (71.5 - 91.5)	88.6 (83.8 - 92.1)	85.0 (80.1 – 88.8)
Ever offered a “free” cigarette by a tobacco company representative	Total	7.5 (6.3 - 8.8)	5.5 (4.7 - 6.4)	6.1 (4.8 – 7.6)
	Male	9.1 (7.5 - 11.0)	7.2 (5.9 - 8.7)	8.3 (6.2 – 10.9)
	Female	5.6 (4.3 - 7.1)	3.9 (3.2 - 4.6)	3.3 (2.5 – 4.3)

Percentage of current smokers usually buying their cigarettes in a store being not refused because of their age, similarly as those being offered a cigarette by a tobacco company representative, did not change significantly both in boys and girls (Table 14).

## **Discussion**

### ***Prevalence, Cessation, and Addiction***

Tobacco use in Slovakia is widespread among adolescents. Despite of certain decline of prevalence of ever smokers after 2007, the situation cannot be considered as too optimistic: other indicators of tobacco use have not shown decreasing trend and are still rather high (Table 1, Table 10). It reflects traditional attitudes towards smoking considering smoking of women as inappropriate as shown in prevalence of smoking of adults, where males clearly predominates over women (34% vs 16 %) (WHO Report on the Global Tobacco Epidemic, 2009). However, GYTS results suggest that such situation will change in the near future because, despite of earlier

initiation in boys, in age 13-15 years girls smoke as frequently as boys, as seen in current cigarette smoking. The same applies for prevalence of susceptibility to initiate smoking, where girls presented positive answers as frequently as boys, also indicating disappearing of gender differences in the future. The results (about one fourth of never smokers being susceptible) indicate possible rising prevalence of smokers in the next years, both in boys and females (Forrester et al., 2007), which should be considered as a potential public health problem (Table 1). Use of tobacco products other than cigarettes deserves attention, because of significant increase after 2007, particularly among girls (Table 10). This finding indicates introduction of these products as exotic form of tobacco use (e.g. water-pipes) in countries with traditional dominance of cigarettes (Baška et al., 2008)

### ***Knowledge and attitudes***

Attitudes and views towards tobacco use and smoking shared among adolescents significantly influence initiation and development of tobacco use. GYTS results from Slovakia showed (Table 2) that adolescents still accept better smoking of boys than smoking of girls (more frequently expressed positive attitudes towards smoking of boys than girls). However, both boys and girls held almost the same attitudes (no statistical gender differences). Moreover, respondents rather frequently consider smoking as a social mediator (smokers having more friends)

### ***Harmful Effects of Smoking – School curricula***

The harmful effects of smoking are well known and well documented.-The tobacco epidemic kills 5.4 million people a year from lung cancer, heart disease, and other illnesses (World Health Organization. MPOWER, 2008).The younger children are when they first try smoking, the more likely they are to become regular smokers and the less likely they are to quit (Khuder et al., 1999; D'Avanzo et al., 1994; Chen and Millar, 1998; Everett et al.,1999; Breslau and Peterson, 1996). And while evidence is strong, in many cases, young people are still unaware of the harmful effects. Schools are integral to educating youths about the dangers of tobacco use but in Slovakia, only about half of respondent reported to be taught about dangers of smoking (Table 9). Another problem in this issue is represented by a content of school based activities. It is well known that mere education on health effects of tobacco in this age group has only very weak effect, if any at all (Baška et al., 2004). Tobacco control interventions in school age children should be focused particularly on change of attitudes towards smoking, social resistance as well as assertiveness, to be effective. GYTS Slovakia showed that positive answers to question on discussions why people in their age smoke (i.e. regarding attitudes towards smoking) were even less frequent than reports on teaching about the dangers. It indicates that in Slovakia, beside insufficient quantity of school-based intervention, also existing activities do not reach their potential effect because its content is not always put together respecting evidence-based methods. Moreover, comparing with previous rounds of GYTS shows no signs of improvement of the situation, and the percentage of positive questions was relatively the highest in 2003 (Table 12). Strengthening education is a focus of the FCTC. Educators are specifically mentioned as important sources of information about the dangers of tobacco use for their students.

### ***Public Awareness and Dangers of Smoking***

In Slovakia, effect of programs to raise awareness on the dangers of tobacco smoking has been diffused with other contradicting pro-tobacco messages. The indirect advertisement represents a particular problem. Although most of students reported seeing anti-smoking media messages in TV in the previous 30 days (Table 7), about the same percentage of them reported seeing cigarette brand names on TV as well as pro-tobacco messages in newspapers or magazines. On

the other hand, the situation regarding indirect advertisement has been improving since 2003 (Table 13), most probably as a result of more effective legislation (ban on sponsorship in force from 2005<sup>6</sup>) as well as improvement of its enforcement. Relative high percentage of reports of seeing anti-smoking messages on TV in 2007 compared to other rounds of GYTS (i.e. in 2003 and 2011) can be at least partially attributable to the campaign HELP- For a Life Without Tobacco supported by European Commission<sup>7</sup>. The campaign ran from 2005 to 2010.

### ***Regulations to Control Tobacco Use in Youths – Youth access***

In Slovakia, the the Act No. 377/2004 Coll. On Protection of Non-smokers as amended explicitly bans sale of any tobacco products for those younger than 18 years. Despite this legislative measure, all of the students enrolled in this survey who reported they used tobacco were under the age of eighteen.-In addition, about half of current smokers indicated that they were able to buy their cigarettes in a store and 8 in 10 of them reported that they had not been refused due to their age in the last 30 days (Table 3). These results indicate very poor compliance with the existing legislation and a deep gap between laws and their enforcement in Slovakia . It also indicates social attitudes still considering tobacco use in minors as normal and ethically acceptable. The high social tolerance towards smoking of adolescents is indicated also by high percentage of current smokers (56,0%) usually smoking in homes, i.e. attitudes of their parents allow tolerates it. Although percentage of students offered by free cigarette samples seems relatively low, taking into consideration total ban of such form of sale promotion, it again clearly evidences low enforcement of the legislation by representatives of tobacco companies.

Fact that results have not changed significantly from 2003 and 2007 (Table 14) indicates a need for adoption of different, much more effective measures, to deal with the problem.

### ***Secondhand Smoke***

In Slovakia, the environmental tobacco smoke is regulated by the Act No. 377/2004 Coll. On Protection of Non-smokers as amended. It prohibits to smoke in all health-care facilities, any type of schools including universities, governmental and public administration offices, cultural and sport facilities, means of public transportation, railway platforms, stations and stops. The Act also prohibits smoking in facilities of mass caterer (restaurants, canteens, buffets etc.) and groceries. However, the Act does not deal with smoking in bars, pubs, cafés etc. i.e. facilities where meals are not served. Moreover, it does not deal with environmental tobacco smoke from such facilities situated inside indoor shopping centers.

Passive smoking outside homes is in Slovakia very prevalent (Table 4) and represents a significant public health problem considering both direct health effects of tobacco smoke (Lifting the smokescreen, 2006), and psychosocial effects. i.e. forming an environment promoting smoking initiation (Siegel et al., 2008). Moreover, within the studied period (from 2003 to 2011) no improvement of the situation has been observed despite the relevant legislation and its amendments in 2005 and 2009. These amendments have extended smoking bans and should contribute in smoke-free environment. However, GYTS results indicate minimal effect of them. It seems that a partial dealing with the problem cannot lead to smoke-free environment. It can be achieved only through well-defined comprehensive measures (WHO Report on the Global Tobacco Epidemic, 2009).

The results of this survey showed that most of adolescents believed that secondhand smoke could be harmful to them (Table 5) and that smoking should be banned from public places (Table 4). It indicates positive social attitudes towards measures to eliminate environmental tobacco smoke.

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<sup>6</sup> The Act No. 525/2005 Coll. amending the Act No. 147/2001 Coll. On Advertising

<sup>7</sup> [http://ec.europa.eu/health/tobacco/help/index\\_en.htm/](http://ec.europa.eu/health/tobacco/help/index_en.htm/)

Taking into consideration a high occurrence of passive smoking, the situation is appropriate to adopt more effective legislation (and its enforcement).

### ***Relevance to FCTC***

The results of this GYTS are critical for gauging progress toward WHO FCTC and MPOWER implementation and uptake.-

Participation of Slovakia in GYTS addresses the first element of MPOWER (*Monitor tobacco use and prevention policies*). And GYTS asks students a range of questions that spans many of the remaining elements of MPOWER. The GYTS results in Slovakia are critical for gauging progress toward fully implementing the elements of MPOWER among adolescents:

- **Protect people from tobacco smoke**

The GYTS data show that 84.9% % of students are around others who smoke outside their home and 45.2% of them live in homes where others smoke in their presence. The findings underline the importance of comprehensive legislation to ensure smoke-free environment.

- **Offer help to quit tobacco use**

Results from GYTS show that students who currently smoke are interested in quitting.-Of students who currently smoke:

- 64.8% of them want to stop smoking.
- 75.7% of them tried to stop smoking in the past year.
- 63.8% of them have ever received help to stop smoking.

The findings indicate importance of cessation support tailored for specific needs of adolescents.

- **Warn about the dangers of tobacco**

During the past year, 54.6 % of students had been taught in class about the dangers of smoking and 45.5 % of them had been taught in class about the effects of tobacco use.- The GYTS data also show that during the past year, 46.3% of students had discussed in class reasons why people their age smoke. The findings indicate insufficient employment of possible potential of school programs.

- **Enforce bans on tobacco advertising, promotion, and sponsorship**

The GYTS data show that 63.1% of students saw anti-smoking media messages on TV in the past 30 days.-But, in the past 30 days, 60.7% of them saw cigarette brand names when watching TV and 63.2% of them saw pro-cigarette messages in newspapers or magazines.-Further, 16.2% of students have an object with a cigarette brand logo and 7.8% of them were offered free cigarettes by a tobacco company representative. The findings indicate importance of measures to eliminate indirect tobacco advertisement as well as more effective enforcement of legislation banning some forms of tobacco products sale promotion.

GYTS methodology provides an excellent framework for monitoring and guiding the implementation of school tobacco control programs while making it compliant with the requirements of FCTC.

The results of this survey will be disseminated broadly and, ideally, used to adopt and implement effective legislative measures for preventing and reducing tobacco consumption, nicotine addiction, and exposure to tobacco smoke.-

## ***Relevance to Country***

Among GYTS findings in Slovakia the following ones have a special relevance considering social and health impact of tobacco use:

- In current tobacco use, cigarette smoking dominates. The prevalence shows balanced trend with no significant gender differences. However, considering global aspect, the prevalence is rather high.
- Occurrence of smoking susceptibility among never smokers shows no significant difference between boys and girls indicating disappearing of gender differences in the future, currently seen in adult population in Slovakia
- Passive smoking outside homes is very widespread and situation has been unchanged since 2003.
- School programs are not adequately used. There is a significant gap between possibilities and actual situation. Education in schools, together with other community and nationwide campaigns and programs could effectively decrease prevalence of current smokers, nonsmokers susceptible to smoke as well as increase proportion of smokers willing to quit.
- The data indicate very poor compliance with legislation banning sale of tobacco products for minors.
- Although the situation regarding indirect tobacco advertisement in mass media has been improved, its extent is still high. Tobacco control activities should continue in this area and flexibly react to efforts of tobacco industry to penetrate media and thus eliminate its influence of minors.

## ***Proposed Interventions/Further Studies***

Considering GYTS findings in Slovakia, several suggestions regarding possible intervention and further research in this field can be formulated:

- Attention should be paid on school-based tobacco control programs. Although benefit of school-based programs alone is rather limited to short-term effects, they have significant contribution as a complement of other intervention such as extracurricular activities or community based campaign (Dobbins et al., 2008). One of important steps to improve the current situation is to emphasize an importance of school-based intervention in relevant decision makers as well as appropriate education of teachers and other workers involved in pedagogic process in school how to prepare and implement evidence-based effective tobacco control programs for school children.
- Smoking of girls deserves attention. Although prevalence of it has not increased, the results indicate widespread use of tobacco among adolescent girls. In campaigns, specific strategies should be employed, such as pointing out cosmetic effects of smoking and relation between smoking and body weight. Beside other health risks, smoking of girls assumes particular significance considering elevated widespread use of hormonal contraceptives even among teenagers. Therefore, increased cardiovascular risk of a combination between smoking and hormone contraceptive use should not be neglected.
- Taking into consideration increase of use of other tobacco products after 2007, this problem should be monitored carefully to adopt appropriate measures if needed.
- GYTS results indicate an urgent need for effective enforcement to keep the legislation banning sale of tobacco products for minors in Slovakia.

- Occurrence of passive smoking outside homes despite several legislation changes has not decreased. Effective measures to ensure smoke-free environment are needed.
- To understand socio-economic and demographic determinants of initiation and development of tobacco use, further cross-country analysis focused on association between tobacco control measures, socio-economic, geographic and demographic factors and selected GYTS indicators would be beneficial.
- To understand epidemiological situation regarding tobacco use and related factors in Slovakia, there is need for data on adult population. Standard, representative and comparable surveys on regular base are important. Considering these aspects, the Global Adult Tobacco Survey methodology would be appropriate.

### **Recommendations**

Based on the most pressing GYTS findings, the following recommendations can be formulated:

- To develop a regular framework to provide effective evidence-based tobacco control school programs including education of teachers and other school-workers involved in pedagogic process, distribution of guidelines and reviews of good practice. Besides traditional cigarette smoking, attention should be paid also to other forms of tobacco use.
- Considering high occurrence of passive smoking outside homes, amendment of the Act on Non-smokers Protection should be passed to ensure smoke-free environment. The amended Act should extend regulation of smoking to areas currently not controlled, particularly bars, pubs and cafés as well as indoor shopping centers. Moreover, effective enforcement of the legislation should be ensured.
- Considering a very high percentage of current smokers reporting being not refused because of their age when buying cigarettes, reevaluation of ways of enforcement of the current legislation is needed to be more effective.

## **References**

- Khuder SA, Dayal HH, Mutgi AB. Age at smoking onset and its effect on smoking cessation. *Addictive Behaviors*, 1999, 24(5):673–677.
- D’Avanzo B, La Vecchia C, Negri E. Age at starting smoking and number of cigarettes smoked. *Annals of Epidemiology*, 1994, 4(6):455–459.
- Chen J, Millar WJ. Age of smoking initiation: implications for quitting. *Health Reports*, 1998, 9(4):39–46.
- Everett SA et al. Initiation of cigarette smoking and subsequent smoking behavior among U.S. high school students. *Preventive Medicine*, 1999, 29(5):327–333.
- Breslau N, Peterson EL. Smoking cessation in young adults: age at initiation of cigarette smoking and other suspected influences. *American Journal of Public Health*, 1996, February, 86(2):214–220.
- T Baška, I Pudule, N Tilgale et al. Smoking tobacco in waterpipes among adolescents in Europe: the case of Latvia and Slovakia. *Tob. Control* 2008;17:432.
- Baška T, Straka Š, Bašková M, Maďar R. Effectiveness of school programs in tobacco control. *Cent Eur J Publ Health* 2004; 12(4): 184-6
- Dobbins M, Decorby K, Manske S, Goldblatt E. Effective practices for school-based tobacco use prevention. *Prev Med.* 2008; 46(4): 289-97.
- Forrester K, Biglan A, Severson HH, Smolkowski K. Predictors of smoking onset over two years. *Nicotine Tob Res.* 2007; 9(12):1259-67.
- Lifting the smokescreen – 10 reasons for a smoke free Europe. European Respiratory Society: Brussels; 2006
- Peto R, Lopez AD, Boreham J, Thun M. Mortality from smoking in developed countries 1950-2000. 2nd Edition, revised June 2006. available at:  
<http://www.deathsfromsmoking.net/publications.html>.
- Prevalence of use of addictive drugs in Slovakia and opinions of citizens regarding problems related to drug addiction (in Slovak) [Rozšírenosť užívania drog na Slovensku a názory občanov na problémy spojené s drogovou závislosťou]. Bratislava: Statistical Office of the Slovak Republic; 2006
- Siegel M, Albers AB, Cheng DM, Hamilton WL, Biener L. Local restaurant smoking regulations and the adolescent smoking initiation process: results of a multilevel contextual analysis among Massachusetts youth. *Arch Pediatr Adolesc Med.* 2008; 162(5): 477-83.
- The European health report 2005. Public health action for healthier children and population. WHO Regional Office for Europe: Copenhagen; 2005
- WHO Report on the Global Tobacco Epidemic, 2009: implementing smoke-free environments. Geneva: World Health Organization, 2009.
- World Health Organization. MPOWER: A policy package to reverse the tobacco epidemic. Geneva: World Health Organization; 2008.