BULGARIA 2015 GLOBAL YOUTH TOBACCO SURVEY

A. MANOLOVA

REPUBLIC OF BULGARIA
MINISTRY OF HEALTH

NATIONAL CENTER OF PUBLIC HEALTH AND ANALYSES

World Health Organization

DEPARTMENT OF HEALTH & HUMAN SERVICES USA

CDC
CENTERS FOR DISEASE CONTROL AND PREVENTION

BULGARIA 2015 COUNTRY REPORT

GLOBAL YOUTH TOBACCO SURVEY (GYTS)

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ACRONYMS

CDC United States Centers for Disease Control and Prevention

CI Confidence interval

COPD Chronic Obstructive Pulmonary Disease

ESPAD European School Survey Project on Alcohol and Other Drugs

EU European Union

FCTC (WHO) Framework Convention on Tobacco Control

GYTS Global Youth Tobacco Survey

HBSC Health Behavior in School-aged Children

LMIC Low and middle-income countries

MoE Ministry of Education

MoF Ministry of Finances

MoH Ministry of Health

MPOWER a package of six evidence-based demand reduction measures: 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

NCDs Noncommunicable diseases

NCPHA National Center of Public Health and Analysis

NIHRD National Institute of Health Research and Development

NSI National Statistical Institute

OSH Office on Smoking and Health (United States)

ROC Rest of the country (subsample)

SE standard error

TFI Tobacco Free Initiative

UN United Nations

WHO World Health Organization

FOREWORD

Tobacco consumption is the most hazardous preventable cause for diverse chronic non-communicable diseases and premature death. To achieve reductions in tobacco related morbidity and mortality, prevention of adolescent smoking is an important public health priority and mandatory element of a broader comprehensive smoking prevention effort.

In this report the data from the third stage of GYTS project, held in 2015 are presented and changes in tobacco use of Bulgarian adolescents aged 13-15 years, their knowledge, attitudes and beliefs towards tobacco use and some other smoking determinants between the all three stages of the survey are evaluated.

Regardless of the number of favorable policy changes during the last two-decade the GYTS data ensure indisputable evidence, that children's smoking remains serious and priority public health issue in Bulgaria.

Those data show, relatively high rate of experimentation - more than a half of the students (56.7%) have ever tried any tobacco product. As a result, for 28.8% of students, 27.4% of boys, and 30.1% of girls, it turns to be an initiation and they are current tobacco users. Another alarming trend is experimenting and using tobacco products, other than cigarettes. This is actual practice for 10.8% of current tobacco users among students aged 13-15 years, who used electronic cigarettes and another 16.9 %, who smoke waterpipe.

Although there is a stable significant downward trend in the level of cigarette smoking experimentation between all three GYTS surveys - from 65.7% in 2002 to 58.8% in 2008 and 48.9% in 2015, shift in tobacco product preferences of experimenting students could successfully explained it.

High rate of smoking experimentation and rising usage of different tobacco products are combined with significant decrease in number of students, who want to stop smoking now and who definitely think that tobacco smoke is harmful for their health (from 68.1% in 2008 to 57.1% in 2015). At the same time anti-smoking messages in media are noticed by a half of students (54.3%), which is significantly less than in 2002 (94.8%) and 2008 (92.1%).

General picture of rising children and adolescents vulnerability, problematic tobacco control legislation enforcement, unsustainable health promotion and tobacco prevention outline the imperative need of development and implementation of qualitatively new approaches and preventive programs yet in the youngest school age, to prevent the “initial” use of cigarettes or maximally postpone initiation, to provide support for smokers willing to quit smoking, still not met need for proactive and sustained tobacco control efforts.

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This report, based on the 2015 Global Youth Tobacco Survey findings in Republic of Bulgaria has been prepared by Assoc. Prof. Antoaneta Manolova MD, PhD - national coordinator of the three stages of GYTS, Bulgaria, head of department "Children's and Youth Health" of the National Center of Public Health and Analysis

The Global Youth Tobacco Survey (GYTS) Bulgaria, 2015 is successfully completed due to the efforts and involvement of many organizations and individuals at different phases of the survey.

We would like to thank the Ministry of Health for their cooperation and the Regional Health Inspectorates as the implementing agency for data collection, Ministry of Education, Regional Inspectorate of Education for providing the necessary school enrollment database and authorization for carrying out the survey in schools.

At the NCPHA, we express our gratitude to the Director of the Center Assoc. Prof. Hristo Hinkov, MD, PhD and the Deputy Director of the Center Prof. Plamen Dimitrov, MD, PhD, the Head of WHO Country Office, Bulgaria Assoc. Prof. Michail Okoliyski, PhD for their cooperation and support, as well as to our colleagues from the Directorate "Health promotion and disease prevention" for their assistance commencing with preparation of the study to the final reporting.

We are grateful for the support of the school principals and teachers who allowed the field staff to borrow their teaching hours, and the students who were willing to take the time to answer our questions.

Last but not least we thank to all Bulgarian students who took part in the survey ad did their best to be frank and honest.

The cover illustration is the winner of XVII Children Contest "No to cigarettes" 2013, painted by Dessislava Dimitrova, 10 years. The Contest is organized by NCPHA, together with the Italian League for the Fight Against Cancer (ANVOLT) and the Foundation "Bulgaria Youth Prevention"

EXECUTIVE SUMMARY

Tobacco consumption is the most hazardous preventable cause for diverse chronic non-communicable diseases and premature death. To achieve reductions in tobacco related morbidity and mortality, prevention of adolescent smoking is an important public health priority and mandatory element of a broader comprehensive smoking prevention effort.

The **AIM** of this report is to present the data from the GYTS project, held in 2015 and evaluate changes in tobacco use of Bulgarian adolescents aged 13-15 years, their knowledge, attitudes and beliefs towards tobacco use and some other determinants of smoking, between the three stages of the survey.

METHODOLOGY

The GYTS-Bulgaria is a cross-sectional self-administered, school-based survey of a nationally representative sample of students from 7th, 8th and 9th grades associated with the age group 13-15 years. National Center of Public Health and Analyses conducted тhe survey in 2015. The school and class response rate is 100%. A total of 4,042 of the 4,702 sampled students in grades 7 - 9 completed the survey, of which 3,532 were aged 13-15 years. The overall response rate is 86.0%.

The Bulgarian version of the GYTS multiple-choice questionnaire is composed of 73 questions that cover the following topics: tobacco use (smoking and smokeless), cessation, secondhand smoke (SHS), pro- and anti-tobacco media and advertising, access to and availability of tobacco products, and knowledge and attitudes regarding tobacco use. The questionnaire is self-administered; using scannable paper-based bubble sheets, and is anonymous to ensure confidentiality.

RESULTS

Tobacco Use

- More than five out of ten of the students (56.7%) have ever tried any tobacco product. About half of them are current tobacco users (28.8%) with 20.4% of students currently smoke cigarettes. In addition, with 10.1% of never smokers who thought they might enjoy smoking a cigarette, twofold more 20.2 % indicate that they were susceptible to start smoking in the next year.
- 36.2 % of the students have ever smoked waterpipe. About half of experimenters currently smoke waterpipe (16.9 %). Current electronic cigarettes smokers are 10.8% of students;

Cessation

- Six out of ten current smokers (61.9%) have tried to stop smoking in the past 12 months with almost ½ of them wanted to stop smoking now (48.1%)

Secondhand Smoke

- About half of all students (50.8%) have been exposed to tobacco smoke at home. Equal proportion of students (50.6%) has been exposed to tobacco smoke inside enclosed public places.

Access and Availability

- Among current cigarette smokers who buy cigarettes, 68.5% are not prevented from purchasing them because of their age, not significantly more boys (71.9%), than girls (65.9%).
- Seven out of ten current cigarette smokers (70.1%) obtained cigarettes by buying them from a store, shop, or street vendor and 68.5% are not prevented from purchasing them because of their age.

Media and advertising

- Half of all students (50.0%) have noticed anti-tobacco messages in the media with no gender differences (49.2% boys and 50.8% girls) and more than six out of ten students (63.2%) have noticed tobacco advertisements or promotions at points of sale.
- About ¼ of students (25.6%) own something with a tobacco brand logo on it, slightly, not significantly more boys than girls do (27.3% and 23.6% respectively).

Knowledge and Attitudes

- More than ½ of the respondents (57.1%) definitely think other people's tobacco smoking is harmful to them. In this context 76.2% of all students, favor banning smoking inside enclosed public places.

Comparison to Previous Global Youth Tobacco Surveys

- In term of cigarette smoking experimentation a stable significant downward trend in this indicator between all 3 GYTS surveys is established - from 65.7% in 2002 through 58.8% in 2008 to 48.9% in 2015;
- A significant reduction from 33.1% to 28.2% of the current cigarette smoker's prevalence between 2002 and 2008 is found. In 2015 this indicator remains at about the same level as in 2008 (27.4%);
- An upward data trend, showing a susceptibility of nonsmokers to start smoking, is observed between the first two GYTS stages, (29.2 % in 2002 vs. 31.2 % in 2008), followed by significant decrease in the susceptibility indicator to 20.2% in 2015.
- Exposure to SHS at home and in enclosed public places has significantly decreased between survey stages; nevertheless 50.8% for homes and 50.6% for enclosed public places in 2015 is still inadmissibly high, especially for indoor public places, where a total ban of smoking is introduced in 2012.

CONCLUSION AND RECOMMENDATIONS

Results of the 2015 "Global Youth Tobacco Survey, Bulgaria" as 14-years follow-up of basic indicators of tobacco use and its determinants provide new and unique information about the

dynamic of this phenomenon among the Bulgarian students aged 13-15. Regardless of the number of favorable policy changes during the last 2 decade, GYTS data ensure indisputable evidence, that children's smoking remains a serious problem and a priority of public health issue in Bulgaria.

The obtained results prove that, in spite of the changes in the public policy, directed at restriction of tobacco use, child smoking continues to be a serious priority issue for public health. They outline the imperative need of development and implementation of qualitatively new approaches and preventive programs yet in the youngest school age, to prevent the "initial" use of cigarettes or to postpone maximally the start of smoking and to provide support for smokers willing to quit smoking.

Anti-smoking interventions for adolescents should be used in concert with other, accepted as effective, tobacco control methods (cigarette and tobacco product pricing, regulatory approaches, enforced smoking bans, compulsory health education). Encouraging young smokers to quit in addition to preventing the great majority of high susceptible non-smokers from starting may be an important first step.

1. INTRODUCTION

On the global scale tobacco smoking is one of the leading preventable causes of morbidity and mortality, while at the same time tobacco is the only legally sold consumer product that kills almost half of those who use it[1]. Tobacco smoking is a largely confirmed cause of carcinogenesis, cardiovascular and respiratory diseases and the exacerbation of chronic health conditions[2,3]. Furthermore, studies have also demonstrated increasingly significant negative health consequences of exposure to secondhand tobacco smoke[4].

According to data information from the World Health Organization (WHO), every year over 5.6 million people worldwide die prematurely from diseases associated with tobacco use with 1 in 8 deaths among the population aged 30 and older being caused by tobacco smoking[5]. By 2030, the mortality rate is expected to reach 8 million per year[6]. If this trend continues, in 21st century tobacco smoking will be the cause of death for about 1 billion people. By estimate, more than 80% of these death incidents will be reported in low- and middle-income countries[4].

Despite the already established negative health consequences and the increased public awareness about the diseases caused by smoking, the use of tobacco products is still widespread. According to WHO data, the total number of smokers in the world is 1.3 billion; 250 millions of them are under the age of 18 years[1].

While in 1952 the percentage of smokers in Bulgaria was 13.7% of all Bulgarian citizens, in last two decades tobacco use rates raised rapidly with one of the highest in Europe proportion of smokers in male population. According to two studies, conducted by National Statistical Institute (NSI), and one research, conducted by National Center of Public Health and Analyses (NCPHA), from the last decade of 19th century to 2007 there has been almost a threefold increase in the number of adult smokers aged 25-65: from 35.6% in 1996 to 40.5% in 2001 and 45.2% in 2007[7]. These figures are mainly due to the significant increase of smoking among women - from 23.8% in 1996 to 43% in 2005, and 38.1% in 2007. However, from 2007 there has been a decrease in tobacco smoking for both genders so that data from recent survey, held in 2014 by NCPHA in the frame of National program for the prevention of chronic noncommunicable diseases 2014-2020, demonstrate that 37.4% of the population aged 20+

[1] Eriksen M, Mackay J, Schluger N, Islami F, Drope J. The Tobacco Atlas – 5th Edition. American Cancer Society. 2015. Available from: www.tobaccoatlas.org.
[2] U.S. Department of Health and Human Services. How Tobacco Smoke Causes Disease - The Biology and Behavioral Basis for Smoking-Attributable Disease. A Report of the Surgeon General. 2010, Atlanta, Ga, U.S. Dept. of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
[3] Olasky, S.J.; Levy, D.; Moran, A., Second hand smoke and cardiovascular disease in low and middle income countries: a case for action, Global Heart 7(2): 151-160, July 1, 2012.
[4] USEPA. Respiratory Health Effects of Passive Smoking: Lung Cancer and Other Disorders" EPA 600/6/90/006F)
[5] World Health Organisation: WHO global report: Mortality attributable to tobacco. Geneva, Switzerland: WHO Press; 2012. Available at: http:/ / www.who.int/ tobacco/ publications/ surveillance/ rep_mortality_attributable/ en/ index.html
[6] World Health Organization. WHO report on the global tobacco epidemic, 2009.ISBN 978 92 4 456391 5 (NLM classification: WM 290)
[7] Vassilevski N, Ivanov L, Tzolova G, Dimitrov P. Surveillance of risk factors for noncomunicable diseases. Bul J Publ Health 2010, 2, (1): 5-34

currently smoke, more man (41.9%) than women (33.1%). Daily smokers are 32.4% of the respondents (36.5% of men and 28.5% of women). Similar results are registered in the NSI survey – European Health Interview, Bulgaria 2014. Current smokers are 34.7 % of total population aged 15 and older (43.4% males and 26.9% females). On a daily base smoke more than one third (28.2%) of all respondents (36.4% males and 20.7% females).

Tobacco smoking among Bulgarian children and adolescents is a serious problem in Bulgaria. In 2008 a survey among 13-15-year-old students, conducted in the framework of GYTS, Bulgaria, demonstrated that 58.8% of all students had tried or experimented with tobacco smoking, as 56.1% accounted for girls and 61.3% for boys. Current smokers (ones who smoked cigarettes in the past month) are 28.2%, as 24.4% - boys and 31.6% - girls. Regardless of the decrease in the number of regular smokers compared to the first stage of the study in 2002, the numbers of non-smokers who are likely to become smokers have increased about 5% in both sexes – from 29.2% in 2002 to 31.2% in 2008[8] .

The European School Survey Project on Alcohol and Other Drugs (ESPAD) 2011 indicates that for the 36 countries participated in the project, proportion of all 16-year-old students had smoked cigarettes at least once in their life is between 26% and 78%. In Bulgaria, that percentage reaches 66% (62% - boys and 71% girls)[9].

Children exposed to second hand smoke (SHS) are group, extremely vulnerable to the negative health consequences of tobacco smoking. According to WHO estimates, with 1 billion adult smokers in the world, children, exposed to SHS are 700,000[10]. On the background data for 2004, with globally 40% of exposed children[11], the results from National SHS Study in preschool age children held in 2013 show that more than a half of 3 to 6-year-old children in Bulgaria are exposed to parental smoke at home (57.5%). Compared with our previous studies, performed in 2002 and 2008, significant reduction in number of exposed children is reported - with 14% from 2002 and 11% from 2008. Obtained results therein are close to the data of GYTS stage I and II, carried out in the same years. The trend in children's exposure to tobacco smoke, established for the last 14 years, is associated with the dynamics of tobacco consumption among Bulgarian adult population.

As shown by the presented data, there is a tendency to reduce smoking among adults and children. The total ban on smoking in all enclosed public places, implemented since 2012, is expected to continue that favorable trend.

[8] Manolova, A. Prevalence of smoking in school age - comparative analysis of the results of the "Global study of smoking in young people," Bulgaria 2002 and 2008 Bulgarian Journal of Public Health, 2009.1, 2: 70-77

[9] ESPAD. The 2011 ESPAD Report. Substance Use Among Students in 36 European Countries. CAN, EMCDDA, Pompidou Group. 2012.

[10] World Health Organization. WHO report on the global tobacco epidemic, 2009.ISBN 978 92 4 456391 5 (NLM classification: WM 290)

[11] Öberg M, Jaakkola MS, Woodward A, Peruga A, Prüss-Ustün A. Worldwide burden of disease from exposure to second-hand smoke: A retrospective analysis of data from 192 countries. Lancet. 2010;6736:1–8.

In this context 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 present comprehensive information on young people under the aspect of tobacco prevention and control. The GYTS provides a global standard of methodic monitoring of youth tobacco use and track key tobacco control indicators. GYTS is a nationally representative school-based survey of students aged 13-15, using a consistent and standard protocol across countries. It is intended to generate comparable data within and across countries.

1.1 COUNTRY DEMOGRAPHICS

Republic of Bulgaria is a Member State of the WHO European Region and EU member state since. Bulgaria is considered as an upper middle-income country.

The data from the National Statistical Institute (NSI) show that on December 31, 2015 Bulgaria's population is 7,153,784 inhabitants, representing 1.4% of the population of the European Union. Compared to 2014 the country's population decreased by 48,414 persons or 0.7%. Male population is 3,477,177 (48.6%) and female – 3,676,607 (51.4%) or to 1,000 males correspond 1,057 females.

Age structure of the population by the end of 2015 demonstrates that children and adolescent (0-19) are 1,311,257 or 18.3% of the population number with 969,753 living in urban areas. The male to female ratio is 1.06 (674,747 males and 636,510 females).

GYTS focuses on students aged 13–15 years. By the end of 2015 this age group in Bulgaria comprises 189,486 children (97,646 boys and 91,840 girls). Of them aged 13 years are 61,908 (32,100 boys and 29,808 girls), aged 14 years are 61,854 (31,874 boys and 29,980 girls) and aged 15 years - 65,724 (33,672 boys and 32, 052 girls).

1.2 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 56th World Health Assembly in May 2003. The FCTC is the world's first evidence-based 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 surveillance, research, and exchange of information[12].

In the European Region, 50 of 53 Member States are currently a Party to the WHO FCTC[13]. Bulgaria has signed the FCTC on December 22, 2003 and ratified it on November 7, 2005, with entering into force on February 5, 2006.

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:

- 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, SHS exposure, knowledge, behavior and attitudes.

1.3 PURPOSE AND RATIONALE

GYTS enhances 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.

The rationale for Bulgaria's participation in the GYTS includes the following:

✓ According to WHO "Mortality attributable to tobacco" report smoking is responsible for one in three of deaths in Bulgaria in the 30 to 44 age group, and one in two deaths in the 45 to 59 age group[14]. The data from the fifth edition of the Tobacco Atlas pointed on the fact that more than 17 800 individuals in Bulgaria die every year from tobacco-related diseases. The data from

[12] World Health Organization. WHO Framework Convention on Tobacco Control (FCTC). Geneva, Switzerland: World Health Organization; 2012. http://www.who.int/fctc/en/index.html (Accessed February 28, 2016).
[13] World Health Organization (2016) Parties to the WHO Framework Convention on Tobacco Control. Accessed 19.04.2016. URL: http://www.who.int/fctc/signatories_parties/en/(Accessed February 28, 2016).
[14] World Health Organization .WHO global report: mortality attributable to tobacco. 2012, ISBN: 978 92 4 156443, pp 392. Available at http://www.who.int/tobacco/publications/surveillance/rep_mortality_attributable/en/ Accessed at 10.04.2016

2010 show that 23% of men's and 9.4% of women's deaths in Bulgaria are caused by tobacco use[15,16].

✓ The most recent Bulgarian mortality data showed that in 2014, 48.2 per 100,000 inhabitants (78.2 per 100,000 males and 19.9 per 100,000 females) have died from lung cancer, with 82% of all lung cancer deaths are attributable to tobacco use[17].

✓ Among ten leading risk factors as causes of disease burden measured in DALYs in Bulgaria, tobacco use is ranged on second place in men (20.1%) and on sixth place for women (3.0%).

✓ Public and family attitudes to smoking as a social activity, poor compliance with measures to restrict tobacco smoking, advertising and sale of tobacco products to minors identify the tendency towards increasing the number of 13-15 wears old non-smokers, susceptible to smoke in a very near future - both boys and girls by about 5% - from 29.2% in 2002 to 31.2% in 2008 (5)as indicative of serious future problems. GYTS 2015 enable the detection of specific mechanism and possibilities for overcoming this unfavorable tendency.

✓ Further questions arise from the increasing use of waterpipe, electronic cigarettes and other insufficiently studied ways of tobacco using. Only a representative international survey based on a common methodology, which will consequently allow comparative results between different countries, may reveal the full picture of such tendencies and provide qualitative data to develop fundamentally new interventions to prevent starting smoking and restrict the use of the "good forgotten old" tobacco products, different from the widespread ones.

✓ Changes in attitudes towards tobacco smoking, the actual conditions that enable unlimited experimenting with tobacco products, the deliberately targeted recruitment of new socio-demographic groups into the use of tobacco products and the transfer of risks and damages between generations constitute the main characteristics of the aforementioned dangerous self-sustaining process of active involvement in tobacco smoking that must be restricted and ceased.

✓ The widespread distribution and commercialization of a physical dependence turns the problem into a complex multilateral social process. It should be studied with sufficient number of specialized and at the same time universal tools. The benefit of this study increases significantly, when it continues over time and expands its scope.

[15] Eriksen M, Mackay J, Schluger N, Islami F, Drope J. The Tobacco Atlas – 5th Edition. American Cancer Society. 2015. Available from: www.tobaccoatlas.org. Accessed at 10.04.2016

[16] Global Burden of Disease Study 2013 Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 301 acute and chronic diseases and injuries in 188 countries, 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. Lancet. 2015 Aug 22;386(9995):743-800. doi: 10.1016/S0140-6736(15)60692-4.

[17] NSI. Mortality by causes, sex and age in 2014. Available from: http://www.nsi.bg/en/content/5625/mortality-causes-sex-and-age. Accessed at 10.04.2016

✓ In this context the third stage of the Global Youth Tobacco Survey, Bulgaria - 2015 is of decisive importance for the continuous monitoring not only for the aim of studying generation trends, but to plan and develop adequate measures and interventions aiming to prevent the smoking initiation and reduce tobacco use among students in the frame of newly launched National program of NCD prevention 2014-2020.

1.4 CURRENT STATE OF POLICY

Policy on Tobacco Control is one of the most effective means of lowering the trend in smoking prevalence and tobacco related morbidity and mortality. Currently, in Bulgaria, there is comprehensive legal frame of tobacco control policies that align with MPOWER recommendations in place. Specific directions on tobacco control include legislative acts associated with smoking in enclosed workplaces and public places; advertising and sponsorship of tobacco products; regulating the sale of tobacco products - including minimum permissible age for purchase/sale; legal provisions defining the so called "identification and legal regulation of the product", which, in turn, includes information for the consumer on the level (concentration) of harmful and toxic substances in cigarettes (nicotine, tar, carbon monoxide), the negative health effects of tobacco use (health warnings) etc.
In addition to that, in the group of legislative acts are also comprised pricing policies, excise duties and measures against smuggling and illegal imports as well as others through which by the path of fiscal and legal-regulatory mechanisms are achieved availability restrictions on tobacco products.

Total smoking ban in indoor public places

The exposure to second-hand smoke (SHS) poses an important health hazard, with the health consequences of SHS becoming evident in the 1980s[18,19]. SHS contains over 7300 gaseous components, aerosols and particles; over 69 carcinogens, mutagens and teratogens and over 300 substances with a biological toxicity and irritant effects on the ciliated epithelial cells of the respiratory tract and thus adversely affects mucociliary clearance[20,21].

[18] Winters TH, DiFranza JR. Passive smoking: a public health problem. Public Health Rev. 1985;13(3-4):309-23.
[19] The Health Consequences of Involuntary Exposure to Tobacco Smoke. A Report of the Surgeon General. 2006. Atlanta (GA): Centers for Disease Control and Prevention (US); 2006.
[20] U.S. Department of Health and Human Services. How Tobacco Smoke Causes Disease - The Biology and Behavioral Basis for Smoking-Attributable Disease. A Report of the Surgeon General. Atlanta, Ga, U.S. Dept. of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health (2010)
[21] Rodgman, A., T. Perfetti. The Chemical Components of Tobacco and Tobacco Smoke. Boca Raton (FL): CRC Press, Taylor & Francis Group, 2009.

US Environmental Protection Agency (USEPA) classify tobacco smoke as a carcinogen "Class A", i.e. there is no safe level of exposure to tobacco smoke[22].

Smoke-free policies have been an important tobacco control intervention. Provision of smoke-free environments is one of the main directions of tobacco control (FCTC Article 8).

- *The* Health Act

Over more than 10 years in Bulgaria, a controversy has been associated with the total ban on smoking in indoor public places, with health professionals, media, business and politicians involved in. Final legislative texts prohibiting smoking in indoor public places and workplaces, as well as some outdoor public places are published in an amendment of Health Act (State Gazette 40 of 2012, effective as of 01.06.2012). Art. 56 and 56a state that smoking is prohibited in all indoor public places (except smoking in separate premises in airports, whereas forbidden in the presence of persons under 18 years of age). Smoking is prohibited at the following *outdoor* public places - adjacent terrain and sidewalks of nurseries, kindergartens, schools, student dormitories and places where social services are provided for children; playgrounds; spaces at which activities for children and students are organized; sport grounds, open air cinemas and theaters - during sporting and cultural events.

Advertising of tobacco products

Bans on tobacco advertising act effectively when they are broad spectrum and include all media and forms of advertising (incl. direct and indirect advertising), promotion of tobacco products and sponsorship of events by tobacco companies. The legal regulation of advertising is carried through:

- *Radio and Television Act (prom. SG. 138 of 1998, last. amend. and suppl. SG. 27 of 2013).*

In Article 75 Section 3 is stated that commercial communications shall not encourage behavior that threatens health and safety and par. 6 of the same Article states: "prohibited all forms of commercial communications for cigarettes and other tobacco products." As stated in paragraph 2 of article 82, "The media services or programs shall not be sponsored by persons whose main activity is the manufacture or sales of cigarettes and other tobacco products."

- *Tobacco and Tobacco Products Act*

Article 35 prohibits direct advertising of cigarettes in all public places with the exception of places of production and trade. The latest version includes new prohibitions texts relating to

[22] USEPA. Respiratory Health Effects of Passive Smoking: Lung Cancer & Other Disorders. Washington, DC: U.S. Environmental Protection Agency, Office of Research and Development, Office of Health and Environmental Assessment, 1992. 31 January 2007. Report no.: EPA/600/6e90/006F.

the media, sponsorship and the Internet, but are also cases where advertising is allowed in places and events, the audience of which does not include persons under 18 years.

Sale of tobacco products. The minimum age for purchase/sale

- *Tobacco and Tobacco Products Act*

Article 30 of the Act on Tobacco and Tobacco Products defines the terms and conditions of trade on the internal market. In paragraph 2 lists the terms and conditions which prohibit the sale of tobacco products. More important are: ban of sale in the territory of nurseries and kindergartens, schools, dormitories for students; to and from persons under 18 years.

Identification and legal regulation of tobacco products

- *Tobacco and Tobacco Products Act*

National Assembly adopts the Act on amendments and supplements to the Tobacco and Tobacco Products Act on March 24, 2016. The act brings into the national legislation the new enhanced requirements of Directive 2014/40/EU of the European Parliament and the Council, which strengthens the rules on how tobacco products are manufactured, produced and presented in EU.

New forms of control on the level of tar, nicotine, and carbon monoxide, and the methods for measuring them is introduced. Producers and importers of tobacco products have to present a list of all ingredients and their amounts used in the production of tobacco products. In addition to the list, there has to be a declaration, containing the grounds for making these ingredients part of the respective tobacco products and toxicological data on the ingredients.

A ban is introduced on presenting, offering, and selling cigarettes and hand rolling tobacco with typical taste and aroma qualities and on ones containing supplements.

Pictorial health warnings have to be put on every consumer's and external package of the tobacco products. Requirements concerning their contents, format, size, font size, and design are also introduced.

The labeling on consumer's and external packages of the tobacco products and on the products must not contain elements or similar things that advertise the respective tobacco product or encourage its use, creating a wrong impression about its characteristics.

Producers and importers of new tobacco products have to notify the Ministry of Economy of each new tobacco product they intend to launch. The notification has to be electronic and has to be given six months before the launching of the respective product. Producers and importers also have to present a detailed description of new tobacco products, instructions on their use, and information about their ingredients and emissions.

The amendments also ban commercial announcements in the press and other print publications that aim to popularize electronic cigarettes and tobacco product containers that can be refilled. Advertising electronic cigarettes in radio and television broadcasts is also banned.

Pricing and fiscal policy framework

Raising tobacco taxes is considered as one of the most effective tools of broad policy for tobacco control. A commonly accepted evaluation is that a 10% increase in cigarette prices will reduce demand for tobacco by as much as 7% among youth and 4% among adults[23]. In developed countries, an increase in prices reduces consumption by an average of 4%, and in low- and middle-income reduction of the consumption can reach 8%.

In Bulgaria the elements of fiscal policy on tobacco control is addressed in Act on Tobacco and Tobacco Products Act and the Excise Duties and Tax Warehouses Act (prom. SG. 91 of 2005, last. Amend. and suppl. SG. No. 15 of 2013). After 2005, the Council of Ministers does not determine the price of tobacco products, the only way to influence the price is by increasing excise duty.

- *Excise duties and tax warehouses act* - amendments to the "Excises Act", which enter into force on 01.01.2016, are promulgated in State Gazette No. 92/27.11.2015.

A 2011 EU directive requires EU member states to increase cigarette excise duties to at least 90 euro (or about 176 leva) for 1000 cigarettes by January 1 2018. Complying to this directive, Bulgaria uses a combination of fixed and ad valorem rates, which, under current legislation, is required to total no less than 148 leva (about 75.7 euro) for 1000 cigarettes.

Under the bill approved by the Cabinet on November 11, 2015, the fixed duty remains unchanged at 101 leva for 1000 cigarettes, but the proportional rate of the ad valorem component rise from 23 per cent of the sale price to 25 per cent on January 1 2016, 27 per cent on January 1 2017, and 28 per cent on January 1 2018.

In nominal terms, this means that the total excise duty for 1000 cigarettes stands at a minimum of 161 leva in 2016, 168 leva in 2017 and 177 leva starting January 1 2018. The hike will affect only cigarette prices, as duties on other tobacco products are set separately.

As of 2016, the proportion between the specific and the proportional excise duty on cigarettes changes so that the total excise represents at least 60% of the average retail price of cigarettes but no less than EUR 90 per 1000 pieces. This target rate must be reached by the end of 2017 and, thus, pursuant to the Excises Act the specific excise would be BGN 70 per 1000 pieces,

[23] Glynn, T., Seffrin, J. R., Brawley, O. W., Grey, N. and Ross, H. (2010), The Globalization of Tobacco Use: 21 Challenges For The 21st Century. CA: A Cancer Journal for Clinicians, 60: 50–61. doi: 10.3322/caac.20052

while the proportional excise would gradually increase. In 2016, the proportional excise is 38% of the retail price, increasing to 40% of the retail price in 2017 and reaching 42% of the retail price in 2018.

Bulgaria has taken legislatives steps to support public health set out in the Health Act, art. 53 para. 3: "One percent of funds received in the state budget from excise taxes on tobacco products and alcoholic beverages, are used to fund national programs to curb smoking, alcohol abuse and preventing the use of drugs." Unfortunately this text does not really apply, which is why the state does not devote sufficient resources to the implementation of prevention activities and promotion.

National program for the prevention of chronic non-communicable diseases 2014-2020 is focused on multiple NCD risk factors; uses an integrated approach and combines various strategies, including policy development, capacity building, partnership and information support at all levels. A combination of population and high-risk strategies that interconnects all components of health system, such as health promotion, public health services, primary care and hospital care, is applied. It comprises intersectoral actions that implement health policies, including concerted actions, aimed at the main determinants of health. One of the main goals of the Program refers to reducing the level of the most common risk factors for NCDs by decreasing the prevalence of smoking, alcohol abuse, improving the nutrition and increasing the physical activity. The overall targets of reducing tobacco use by 2020 consist of:

- Reducing smoking prevalence among the population by 10%
- Reducing the level of distribution of cigarette smoking initiation in children aged 13 by 50%;
- Reducing the intensity of smoking in smokers - men and women aged 25-64 by 50%;
- Increasing the number of patients - regular smokers, who received advice from their doctor to quit using tobacco products, up to 50%;
- Reducing the number of pregnant women, who smoke during pregnancy, by 50%.

A consistent and comprehensive government policy on tobacco control **with high level of enforcement** will be one of the most effective measurers for modifying and curbing smoking prevalence associated with tobacco related morbidity and mortality.

1.5 OTHER TOBACCO SURVEYS

The GYTS is conducted in Bulgaria in 2002, 2008 and 2015. In addition to the GYTS, the following surveys are implemented in Bulgaria:

Adult Surveys

- Bulgaria National Study of Health Risk Factors - Smoking, 2007 (ages-25-65), 2014 (ages 20 and older)

- European health interview survey – 2008 and 2014 (ages 15 and older)

***Children and Youth Surveys**:*

- European School Survey Project on Alcohol and Other Drugs (ESPAD) in 2003, 2007 and 2015
- Health Behavior in School-aged Children (HBSC) – wave 2005/2006 and wave 2013/2014
- National Survey of Health Risk of Second Hand Tobacco Smoke Exposure in Preschool Children in 2002, 2008 and 2013

1.5 COUNTRY SPECIFIC OBJECTIVES

Based on the Bulgarian National Health Strategy 2014 – 2020[24] there are several objectives related to the tobacco prevention and control:

- Reduce current tobacco use in Bulgaria in students in grades 7-9 from 29% in 2015 to 18% in 2020;
- Reduce current cigarette use in Bulgaria in students in grades 7-9 from 20% in 2015 to 10% in 2020;
- Reduce the number of never tobacco users susceptible to tobacco use in the future in Bulgaria in students in grades 7-9 from 20% in 2015 to 10% in 2020;
- Increase tobacco use cessation attempts in Bulgaria in students in grades 7-9 from 62% in 2015 to 80% in 2020;
- Reduce the SHS exposure at home in Bulgaria in students in grades 7-9 from 50 % in 2015 to 35 % in 2020;
- Reduce the exposure to SHS smoke inside any enclosed public places in Bulgaria in students in grades 7-9 from 51% in 2015 to 5% in 2020.

2. METHODOLOGY

2.1 Questionnaire

The GYTS questionnaire contained 73 multiple-choice questions. The survey included 54 questions from the GYTS Standard Core Questionnaire, and 19 optional questions. The final questionnaire is translated into Bulgarian and then back translated into English to check for accuracy. The 2015 Bulgarian questionnaire is provided in ***Appendix A***.

2.2 Sampling Design

The 2015 Bulgaria GYTS is a school-based survey, which employed a two-stage cluster sample design to produce a national/regional/city-level representative sample of students in grades 7-9. The sampling frame consisted of all primary and secondary (state and private) containing grades 7, 8 and 9. In the first stage, schools are selected with probability proportional to school enrollment size. The second sampling stage consisted of systematic equal probability sampling (with a random start) of classes from each school selected during the first stage. The GYTS are conducted in 50 primary and secondary schools and 202 classrooms. A total of 4042 students participate in the GYTS. The grades that are sampled for the 2015 GYTS were 7, 8 and 9.

2.3 Data Collection

Data collection took place from 01.05.2015 to 30.06.2015, and was performed by 38 field staff from the Regional Health Inspectorates who had undergone one day training in GYTS methods and protocol for data collection.

Survey procedures are designed to protect the students' privacy by allowing for anonymous and voluntary participation. The questionnaire is self-administered in the classroom. Students recorded their responses directly on an answer sheet that could be scanned by a computer.

2.4 Data Analysis

A weighting factor is applied to each student record to adjust for probability of selection, non-response, and post-stratification adjustment to population estimates. SUDAAN, a software package for statistical analysis of complex survey data, is used to calculate weighted prevalence estimates and standard errors (SE) of the estimates (95% confidence intervals [CI] are calculated from the SEs). Differences between prevalence estimates are considered statistically significant ($P<0.05$) if the 95% confidence intervals do not overlap[1].

Frequency tables are developed for the survey questions that are considered key tobacco control indicators from the GYTS. Indicators are in accordance with the WHO FCTC and MPOWER technical package.

[1] CDC. Global youth tobacco surveillance, 2000-2007. MMWR 2008; 57 (No. SS-1). Available at: www.cdc.gov/mmwr/preview/mmwrhtml/mm5720a2.htm-Vol.57,No20;5452008-05-23;(Accessed on 14.02.16)

Table 1 provides sample size and response rate information. For the 2015 Bulgaria GYTS, 4 042 questionnaires are completed in 50 schools. A total of 4 042 students participate in GYTS of which 4 015 are aged 13 to 15 years (Male: 1 894, Female: 2 121). The school response rate is 100%, the class response rate is 100%, and the student response rate is 86.0%. The overall response rate is 86.0%.

Table 1: Sample sizes and response rates, by region (unweighted) – GYTS Bulgaria, 2015.

	Region		**TOTAL**
	Sofia	**ROC**	
School Level			
Number of Sampled Schools	25	25	50
Number of Participating Schools	25	25	50
School Response Rate (%)	100.0	100.0	100.0
Class Level			
Number of Sampled Classes	101	101	202
Number of Participating Classes	101	101	202
Class Response Rate (%)	100.0	100.0	100.0
Student Level			
Number of Sampled Students	2430	2272	4702
Number of Participating Students	2 019	2 023	4042
Student Response Rate (%)	83.1	89.0	86.0
Overall Response Rate (%)[1]	83.1	89.0	86.0

[1]Overall Response Rate = School Response Rate X Class Response Rate X Student Response Rate

3. RESULTS

3.1 TOBACCO USE

3.1.1 Any tobacco use (smoked and smokeless)

- The 2015 results (Table 2) show that more than a half of students ***have experimented with any tobacco product*** (56.7%), slightly, but not significantly more girls than boys - 59.5% and 54.1% respectively (P>0.05). Moreover, while gender and regional differences are not overt, significant rise of tobacco experimentation is found out between 13, 14 and 15 years old students (at national level - 41.8%, 54.0% and 66.7% respectively). No regional differences are determined as well.

- About three out of ten students are ***current tobacco users*** (28.8%), at almost equal rate of boys and girls (P>0.05). A significant age differences between 13 and 15 years old students (16.3% and 38.2% respectively) is found (P<0.05). No significant regional differences are found for boys and girls, and a similar significant age trends in Sofia and ROC subsamples.

3.1.2 Smoked Tobacco

- As it could be seen on Table 2, in the 2015 GYTS survey more than 1/2 of the studied population ***has ever smoked tobacco*** (55.5%), not considerably more girls (58.6%), than boys (52.6%). There are no regional differences in both boys and girls, with higher rate in girls from Sofia (P>0.05).

Significant age related differences are found in the rates of smoking experimentation - 14.6% of the 13-years old students and 66.3% of 15-years old at national level. Similar age trend are established in the two studied subsamples (P<0.05).

- The results from the phase III of the survey show that almost half of the students (48.9%) ***have ever smoked cigarettes***, with no significant gender differences found (52.2% girls and 45.8% boys). A significant 2-fold increase of cigarette experimentation rate between 13 and 15 years old - 33.7% and 60.3% respectively is observed (P<0.05).

- Every 3 out of ten students ever smokers have ***experimented with other tobacco products*** (34%) with similar results in boys' and girls' groups, respectively 33.1% and 34.8% (P>0.05) and twofold more 15 years old (44.1%) than those aged 13 (20.3%) – P<0.05.

Significantly, more students from Sofia (42.7%) than from ROC (32.2%) have ever smoked other tobacco products (P<0.05). The significance of these regional differences persists in both boys and girls, and in all age groups.

- ***Current smokers of any tobacco*** are 29.5% of students. No gender differences are found - 25.7% of girls and 29.0% of boys(P>0.05). In contrast smoking of any tobacco raises significantly with age - 14.6% in the group of 13-years old, 23.3% in in the group of 14-years old and 37.4%

at 15-years old (P<0.05). No significant regional differences is established ever if smokers in Sofia are more than in ROC sample – 30.1% and 26.9% respectively.

- In the 2015 survey about quarter of the adolescents who have experimented with tobacco are ***current cigarette smokers*** with girls slightly but not significantly predominating (respectively 29.0% and 25.7%). Current cigarette smoking rises significantly with age – from 9.5% at the age of 13 to 16.5% (1.5 times) at the age of 14 and 3 times (29.5%) at the age of 15 years. (P<0.05). No regional differences are established with 18.3% current cigarette smokers in Sofia and 20.8% in ROC (P>0.05)
- About one out of ten current cigarette smokers have smoked cigarettes on 20 or more days of the past 30 days (10.9%) with no significant gender difference (10.5% boys and 11.5% girls) - P>0.05. About 6 times more 15-years old students and 2.8 times 14-years old than those aged 13 are ***frequent cigarette smokers***, respectively 17.2%, 8.5% and 3.0% (P<0.05). No regional difference are established (7.9% in Sofia and 11.5% in ROC subsamples – P>0.05).
- Current smoke of ***other tobacco (cigars, pipes, cigarillos etc.)*** report 13.3% of inquired smokers, slightly but not significantly more boys (14.4%) than girls (12.0%)-P>0.05. Other tobacco product current smoking rises significantly with age up to 5.7 times from 13 to 15 years of age (3.0% at 13, 8.5% at 14 and 17.2 % at 15 years) – (P<0.05).

The significant regional differences (20.0% in Sofia and 12.0% in ROC) are mainly due to the differences in girls' smoking of other tobacco products – 20.7% in Sofia and 10.3% in ROC, respectively (P<0.05).

3.1.4 Waterpipe and electronic cigarettes

- More than one third of smokers ***have experimented with waterpipe*** (36.2%) with no gender differences registered (36.1% for both groups). About 1.8 times more students aged 15 have ever tried waterpipe (43.3%) than those aged 13 years (24.5%)-P<0.05.

The greater number of students who have ever tried waterpipe are situated in Sofia (49.0%) versus 33.6% in ROC (P<0.05).

- About one fifth of experimenters are ***current waterpipe smokers*** (16.9%), with similar results in boys' and girls' groups, respectively 17.2% and 16.5% (P>0.05). Twofold more students aged 15 currently smoke waterpipe (20.6%) than those aged 13 (10.9%) - P<0.05.
- Another 10.8 % of smokers are currently smoke ***tobacco electronic cigarettes***, with boys slightly but not significantly predominating (respectively 12.2% vs 9. 2% in girls) - P>0.05. Not age nor regional difference in current electronic cigarette smoking are established.

3.1.5 Smokeless Tobacco

- In the small group of ***ever smokeless tobacco users*** (5.2 %), the percentage of boys are twice higher than girls - 6.5% vs. 3.5% (P<0.05.). Neither age, nor regional differences are established in the number of smokeless tobacco experimenters (P>0.05).

- ***Current use of smokeless tobacco*** is reported by about twofold smaller group of students (2.6%), significantly more boys than girls – respectively 3.4% boys and 1.5% girls (P<0.05). No significant age trend is established (P>0.05).

On the background of insignificant regional differences, the lowest number of girls currently using smokeless tobacco is set in Sofia – 0.9% (P<0.05)

3.1.4 Susceptibility to Tobacco Use

- Over 1/5 of never smokers (20.2%), not significantly more girls (23.7%) than boys (17.3%), indicate that they are likely to ***initiate smoking in the future*** (P>0.05). No age related differences are noted, respectively 29.7% (13 years), 31.6% (14 years) and 32.1% (15 years).

Regional data on susceptibility indicator is approaching formal significance with more students from Sofia feel willing to tobacco use in the future 26.2% versus 19.0% in ROC.

- One out of ten never smokers agree that they ***might enjoy smoking a cigarette*** (10.1%) with equal proportions of boys and girls. No age related differences are observed, respectively 12.4% (13 years), 9.2% (14 years) and 9.3% (15 years). This tendency holds for both Sofia and ROC subsamples.

Table 2: Detailed tobacco use status among students 13-15 years old, by gender – GYTS, Bulgaria, 2015

Indicators	Overall	Boys	Girls
	Percentage (95% CI)	*Percentage (95% CI)*	*Percentage (95% CI)*
Any Tobacco Use (smoked and smosmokeles)			
Ever tobacco users[1]	56.7 (52.8 - 60.5)	54.1 (49.7 - 58.5)	59.5 (54.2 - 64.5)
Current tobacco users[2]	28.8 (24.0 - 34.1)	27.4 (20.9 - 35.1)	30.1 (25.6 - 35.1)
Smoked Tobacco			
Ever tobacco smokers[3]	55.5 (51.5 - 59.4)	52.6 (47.8 - 57.4)	58.6 (53.4 - 63.7)
Ever cigarette smokers[4]	48.9 (44.6 - 53.1)	45.8 (41.1 - 50.5)	52.2 (46.5 - 57.8)
Ever smokers of other tobacco[5]	34.0 (30.5 - 37.5)	33.1 (27.6 - 39.2)	34.8 (32.0 - 37.8)
Current tobacco smokers[6]	27.4 (22.8 - 32.5)	25.7 (19.5 - 33.1)	29.0 (24.7 - 33.8)
Current cigarette smokers[7]	20.4 (16.6 - 24.8)	17.2 (12.7 - 22.9)	23.7 (19.5 - 28.5)
Frequent cigarette smokers[8]	10.9 (8.0 - 14.8)	10.5 (6.8 - 15.7)	11.5 (8.5 - 15.3)
Current smokers of other tobacco[9]	13.3 (10.6 - 16.6)	14.4 (10.6 - 19.2)	12.0 (10.1 - 14.3)
Waterpipe and electronic cigarettes			
Ever waterpipe smokers[10]	36.2 (32.4 – 40.2)	36.1 (30.8 – 41.8)	36.1 (31.9 – 40.4)

Current waterpipe smokers[11]	16.9 (14.2 - 19.9)	17.2 (13.8 - 21.3)	16.5 (13.4 - 20.0)
Current electronic cigarettes smokers[12]	10.8 (8.3 - 13.8)	12.2 (9.5 - 15.5)	9.2 (6.7 - 12.5)
Smokeless Tobacco			
Ever smokeless tobacco users[13]	5.2 (3.3 - 8.0)	6.5 (3.9 - 10.6)	3.5 (2.3 - 5.3)
Current smokeless tobacco users[14]	2.6 (1.5 - 4.5)	3.4 (1.7 - 6.5)	1.5 (0.9 - 2.6)
Susceptibility to Tobacco Use			
Never tobacco users susceptible to tobacco use in the future[15]	20.2 (17.7 - 22.9)	17.3 (13.5 - 21.8)	23.7 (19.9 - 28.0)
Never smokers who thought they might enjoy smoking a cigarette[16]	10.1 (7.6 - 13.3)	10.1 (7.1 - 14.2)	10.3 (7.5 - 13.9)

[1]Ever smoked tobacco and/or used smokeless tobacco. [2] Smoked tobacco and/or used smokeless tobacco anytime during the past 30 days. [3] Ever smoked any tobacco, even one or two puffs. [4] Ever smoked cigarettes, even one or two puffs. [5]Ever smoked tobacco other than cigarettes, even one or two puffs. [6] Smoked tobacco anytime during the past 30 days. [7] Smoked cigarettes anytime during the past 30 days. [8]Smoked cigarettes on 20 or more days of the past 30 days. [9] Smoked tobacco other than cigarettes anytime during the past 30 days. [10]Ever smoked waterpipe, even one or two puffs. [11]Smoked waterpipe on 20 or more days of the past 30 days /anytime during the past 30 days. [12] Smoked tobacco electronic cigarettes on 20 or more days of the past 30 days / anytime during the past 30 days . [13]Ever used smokeless tobacco. [14]Used smokeless tobacco anytime during the past 30 days. [15] Susceptible to future tobacco use includes those who answered "Definitely yes", "Probably yes", or "Probably not" to using tobacco if one of their best friends offered it to them or those who answered "Definitely yes", "Probably yes", or "Probably not" to using tobacco during the next 12 months. [16] Those who answered "Agree" or "Strongly agree" to the statement: "I think I might enjoy smoking a cigarette".

3.1.5 Smoking intensity

In 2015 survey the greater number of students (26.4%) smoke 2 to 5 cigarettes with no significant gender differences (P>0.05) but with certain gender specificity in the number of cigarettes smoked (Table 3, Figure 1).

Table 3: Cigarettes smoked per day among current cigarette smokers 13-15 years old, by gender – GYTS Bulgaria, 2015

Indicators	Overall	Boys	Girls
Number of cigarettes usually smoked[1]	*Percentage (95% CI)*		
Less than 1 per day	13.1 (8.8 - 19.2)	12.0 (5.7 - 23.7)	13.8 (10.4 - 18.1)
1 per day	17.1 (12.4 - 23.1)	9.1 (4.2 - 18.8)	23.5 (17.6 - 30.7)
2 to 5 per day	26.4 (21.0 - 32.5)	26.1 (19.3 - 34.1)	26.9 (20.3 - 34.5)
6 to 10 per day	20.6 (15.9 - 26.2)	23.3 (17.7 - 30.1)	18.6 (13.6 - 24.9)
11 to 20 per day	15.8 (13.5 - 18.5)	17.4 (13.7 - 21.9)	14.1 (10.4 - 18.8)
More than 20 per day	7.0 (4.1 - 11.7)	12.0 (6.4 - 21.5)	3.2 (1.7 - 5.8)

[1] On the days that current cigarette smokers smoked cigarettes during the past 30 days.

As it could be seen on **Figure 1**, in the group of smokers of less than 1 cigarette or 1 cigarette per day girls slightly but not significantly prevails (P>0.05). Six to 20 cigarettes daily smoke

slightly more boys than girls do but the gender differences do not reach the level of significance (P>0.05). Only in a small group of students (7.0%), with almost 4 times more boys (12.0%) than girls (3.2%) a daily smoking patterns with smoking more than 20 cigarettes per day is reported (P<0.05).

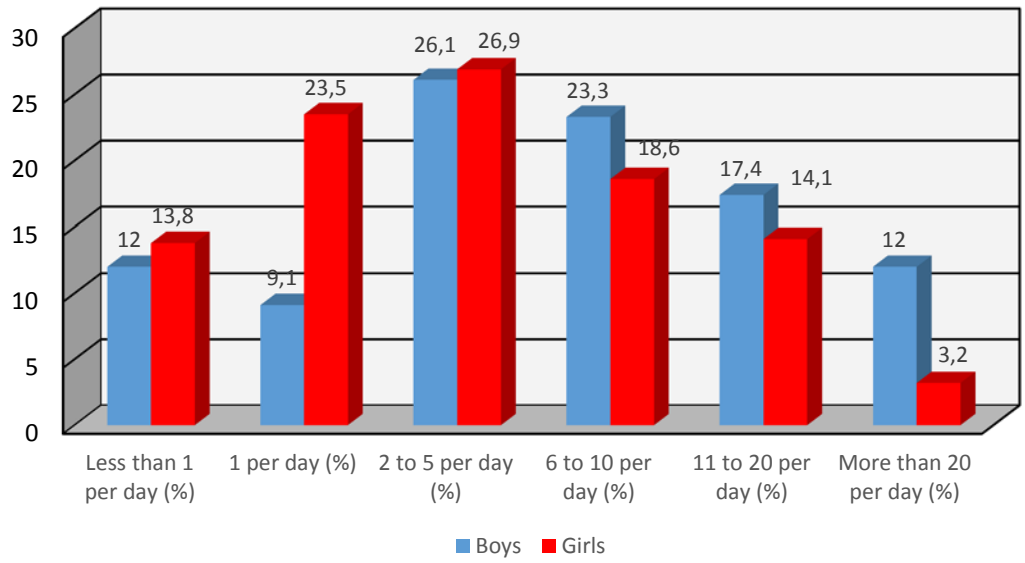


Figure 1. Gender specify of smoking intensity (number of cigarette smoked per day

Using the indicator "***Intensive smokers***" e.g. those current cigarette smokers who smoke 6 or more cigarettes per day, on the days that they smoke the 2015 GYTS results show that in this group belongs 43.4% of current smokers, with boys being 1.5 times more than girl (52.8% versus 35.9%). An upward marginally significant trend of the number of intensive smokers with age is found (32.2% of 13 years old, 37.1 % of 14 years old and 48.4% of those aged 15).
The non-significant in the statistical sense regional differences of 8.7 points with students of the ROC sample being more intensive smokers are observed - 43.4% versus 36.0% in Sofia (P>0.05).

3.1.6. Age of smoking initiation

Concerning the age of smoking initiation, GYTS 2015 results show that 15.4% of all experimenters try their first cigarette before the age of 10, significantly more boys (22.1%) than girls (9.5%) with boys to girl's ratio of 2.3 (P<0.05). Data suggests little or no age and regional differences (P>0.05).

Smoking initiation before age of seven, report 8.3% of students, about threefold more boys (12.1%) and only 4.9% of girls – P<0.05) (Table 4). Findings not show marked variation with age or region (P>0.05).

Table 4: Age at cigarette smoking initiation among ever cigarette smokers 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Age when first trying a cigarette[1]	*Percentage (95% CI)*		
7 years old or younger	8.3 (5.6 - 11.9)	12.1 (8.2 - 17.5)	4.9 (3.0 - 7.8)
8 or 9 years old	7.2 (5.0 - 10.2)	10.0 (6.8 - 14.6)	4.6 (2.7 - 8.0)
10 or 11 years old	14.0 (12.3 - 15.8)	15.5 (12.4 - 19.1)	12.7 (9.7 - 16.5)
12 or 13 years old	41.8 (38.4 - 45.4)	35.5 (32.4 - 38.6)	47.5 (42.9 - 52.2)

[1] Among those that have ever tried a cigarette.

3.2 CESSATION

In the 2015 stage of the survey, about a half of current smokers (48.1%) expressed a ***desire to quit smoking***, not significant more girls expressing this wish – 50.1% versus 45.5% (Table 3). There is no statistically significant difference between different age groups – respectively 54.0% (13 years), 47.6% (14 years) *и* 48.8% (15 years).

No regional differences are found in the number of current smokers who want to stop - 48.0% in Sofia and 48.1% in ROC subsamples (P>0.05). Interesting is the fact that in Sofia males wanting to quit slightly, not significantly prevail - 59.35% versus 39.7% females. Conversely, in ROC, the proportion is higher among girls (67.3%) than in boys (56.3%), with differences suggestive, but not quite significant (P>0.05).

More than 6 out of 10 current smokers (61.9%) ***tried to stop smoking during the previous year***. No gender and age differences in this item are found (Table 6). No significant differences have been determined between regions.

Only 12.0% of students have ever ***received help/advice from a program or professiona***l to stop smoking without gender differences detected (P>0.05) - Table 6. About twofold more students aged 14 and 15 than their 13 years old counterparts have received such a help or advise (13.3% and 11.9% versus 5.4% respectively - P<0.05).

Ever if not reaching a statistically significant level, regional differences are recorded – more girls and 13-, 14 years old in ROC and more boys and 15 years old in Sofia give positive answers on this question (**Figure 2**)

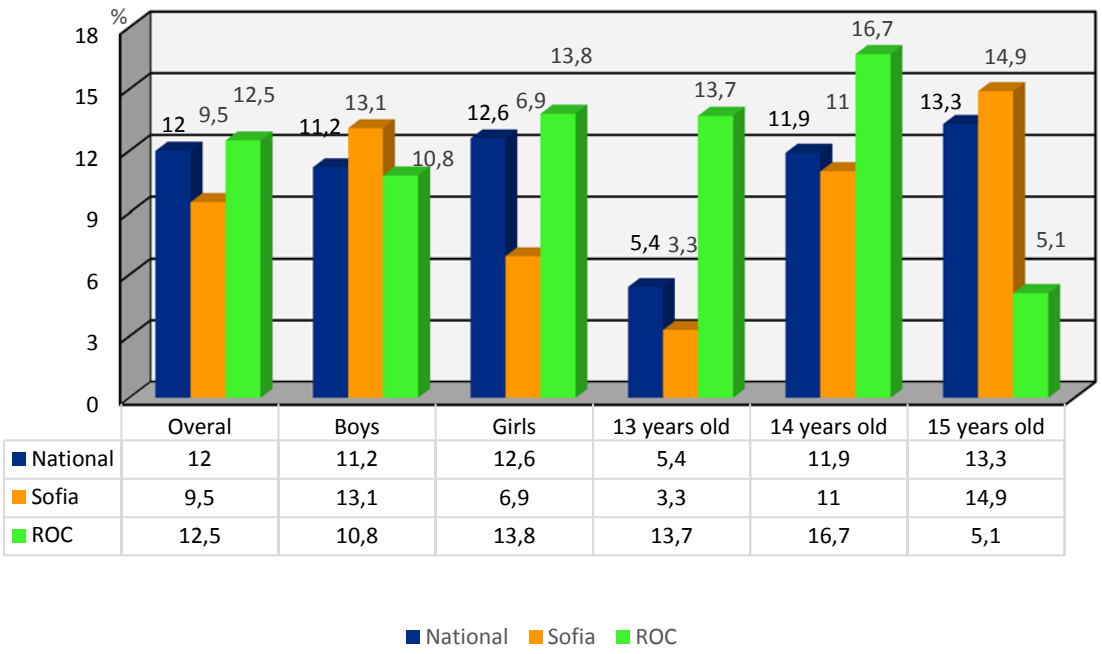


Figure 2. Students who received help/advice from a program or professional to stop smoking by region gender and age

More than 2/3 of smokers ***think that they would be able to stop smoking if they wanted to*** (79.8). Ever if girls' positive responses are with about 5% more, not significant gender differences are established (P>0.05).

For all "Cessation" indicators no significant differences have been determined between regions. Regional data do not show noticeable gender and age variations (P>0.05).

Table 6: Smoking tobacco cessation indicators among current smokers 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Cessation	*Percentage (95% CI)*		
Tried to stop smoking in the past 12 months	61.9 (56.6 - 66.9)	56.3 (47.9 - 64.3)	66.1 (60.1 - 71.5)
Want to stop smoking now	48.1 (40.2 - 56.1)	45.5 (33.4 - 58.3)	50.1 (41.7 - 58.4)
Thought they would be able to stop smoking if they wanted to	79.8 (73.1 - 85.2)	75.0 (62.8 - 84.2)	83.6 (78.8 - 87.4)
Have ever received help/advice from a program or professional to stop smoking	12.0 (8.5 - 16.8)	11.2 (5.6 - 21.1)	12.6 (9.0 - 17.3)

3.3 SECONDHAND SMOKE

The Table 7 presents the SHS exposure during the week preceding the survey at different locations.

- About the half of the studied population reported nearly identical **exposure at their homes and inside any enclosed public places** (50.8% and 50.6% respectively) somewhat but not significantly more girls (55.4% and 56.6 respectively) than boys (46.7% and 45.2% respectively) (P>0.05).

- Over than 6 in 10 students report being exposed to SHS at **any outdoor public places** during the seven days preceding the survey in 2015. Significant differences emerge in the case of exposure to tobacco smoke at outdoor public places compared to that in enclosed spaces with about 10 points for the total sample and boys, and about 15 points for girls (P<0.05). Similarly as for home exposure, but now significantly more girls (70.4%) are exposed to second-hand smoke at any outdoor public places compared to boys (56.3%), (P<0.05).

For the outdoor SHS exposure indicator no significant differences have been determined between regions. Regional data do not show significant gender and age variations as well (P>0.05).

For indicators indoor exposure at private e.g. home and public places, no significant differences have been determined between regions. Regional data do not show noticeable gender and age distribution (P>0.05) with only one exception. The lowest number of SHS exposed students in enclosed public places in ROC (37.4%) are significantly (1.3 times) less than their Sofia counterparts (50.3%) and 1.3 to 1.6 times less than the 14 and 15 years old student from the ROC subsample (47.8% and 58.6% respectively) - P<0.05.

- Very alarming is the fact that every eight out of ten students (80.5%), both boys and girls (78.6% and 82.7% respectively) state that people smoke **inside the school building or outside on school property** where a total ban of smoking exists from 2012. The very high SHS exposure inside the school building or outside on school property indicator presents no significant differences between regions. Regional data do not show significant gender and age variations as well (P>0.05).

Table 7: Students 13-15 years old, who are exposed to tobacco smoke during the past 30 days, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Exposure	*Percentage (95% CI)*		
Exposed to tobacco smoke at home	50.8 (46.2 - 55.4)	46.7 (41.1 - 52.3)	55.4 (50.7 - 60.0)
Exposed to tobacco smoke inside any enclosed public place	50.6 (47.2 - 54.1)	45.2 (41.5 - 49.0)	56.6 (51.5 - 61.5)
Exposed to tobacco smoke at any outdoor public place	63.1 (58.0 - 67.8)	56.3 (50.6 - 61.8)	70.4 (65.8 - 74.6)
Saw anyone smoking inside the school building or outside on school property	80.5 (74.2 - 85.7)	78.6 (70.4 - 85.0)	82.7 (77.0 - 87.2)

3.4 ACCESS AND AVAILABILITY

- More than a half of current smokers (53.4%) in 2015 survey had **bought their cigarettes from a store or shop**. Gender differences on this item are insignificant, but obvious – about nine points in favor of boys (**Table 8, Figure 3**).

Table 8: Source for obtaining cigarettes among cigarette smokers 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Source[1]	*Percentage (95% CI)*		
Purchased from a store or shop	53.4 (47.9 - 58.9)	58.9 (45.1 - 71.5)	49.5 (40.3 - 58.8)
Purchased from a street vendor	16.7 (13.4 - 20.5)	14.3 (9.4 - 21.1)	18.4 (14.6 - 22.9)
Got them from someone else	18.2 (13.7 - 23.7)	15.3 (7.0 - 30.3)	20.2 (14.5 - 27.3)
Got them some other way	4.4 (2.3 - 8.4)	5.3 (1.6 - 16.3)	3.8 (2.1 - 6.8)
Obtaining them by giving someone else money to buy	7.3 (5.1 - 10.4)	6.1 (3.2 - 11.5)	8.2 (5.1 - 12.8)

[1] How smokers obtain cigarettes, they last smoked during the past 30 days.

The other two common ways of cigarette supply, are "someone else" or "street vendors" more often used by girls, than by boys. It could be denoted that "street vendors" in Bulgaria is always related to unbranded 'black market' tobacco products trade.

There is some regional specificities observed regarding the sources of cigarettes supply. Slightly more and close to the limit of significance, from ROC (55.8%) compared to Sofia (40.1%) reported buying their cigarettes from a store or shop (P>0.05). These differences hold both boys (60.9% in ROC versus 47.2% in Sofia) and girls (52.1% in ROC versus 35.6% in Sofia) and well as for students from all age group.

"Someone else" is a second way for obtaining cigarettes for about ¼ f Sofia students (25.2%) and almost achieved significance less ROC students (16.9%), slightly more girls than boys and 13-years old than 15 in Sofia than in ROC.

Sofia students 1.5 times more often report buying illegal cigarettes than their ROC fellows (23.2% versus 15.5%) do. These differences are more pronounced in boys (22.0% versus 13.0%) and younger students. There are ***no ROC students aged 13*** who have both cigarette from a street vendor compared 30.5% of those from Sofia.

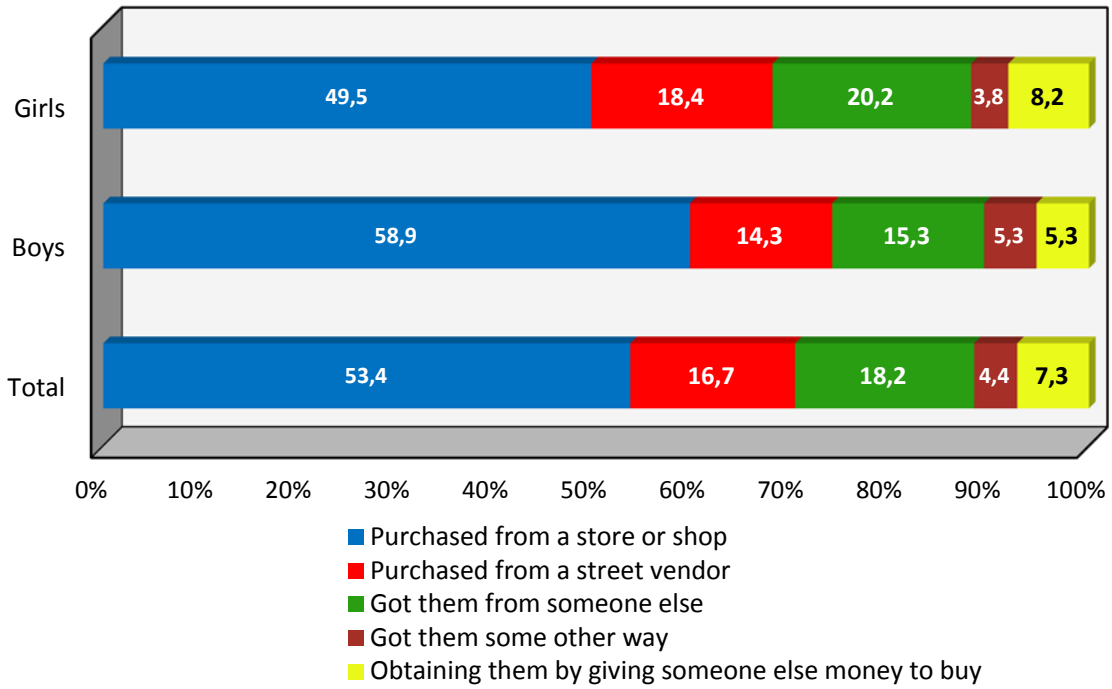


Figure 3 Main sources for obtaining cigarettes among cigarette smokers

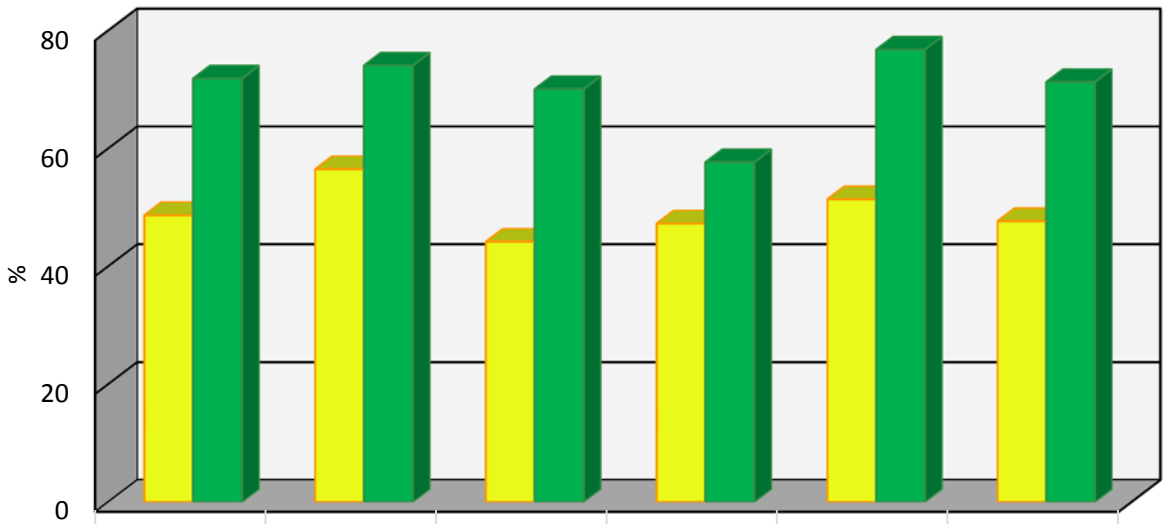
More than two-thirds of current smokers (68.5%) in 2015 survey reported ***not been refused purchase because of their age***. Gender differences found on this item are not significant, but visible – 6% (Table 9).

Significant differences in this indicator are observed between ROC and Sofia subsamples. ROC students can easier purchase their cigarettes without being hindered by their age than their Sofia counterparts – 71.9% versus 48.7% (P<0.05). This pattern holds for both boys and girls as well as all age groups, ever if all differences are not statistically significant but are at the limits of significance (**Figure 4**).

Table 9: Current cigarette smokers 13-15 years old who were not prevented from buying cigarettes because of their age, by gender – GYTS Bulgaria, 2015

INDICATOR	Overall	Boys	Girls
Not prevented from buying	*Percentage (95% CI)*		
Current cigarette smokers who were not prevented from buying cigarettes because of their age[1]	68.5 (60.7 - 75.4)	71.9 (59.1 - 82.0)	65.9 (59.2 - 72.0)

[1] Among those who tried to buy cigarettes during the past 30 days.



	Total	Boys	Girls	13 years old	14 years old	15 years old
Sofia	48,7	56,5	44,2	47,3	51,4	47,7
ROC	71,9	74,1	70,1	57,7	76,8	71,3

Figure 4. Current cigarette smokers who not prevented from buying cigarettes because of their age - regional status

- About two-thirds of current smokers (65.9%) in 2015 survey report they prefer ***to purchase a whole pack of cigarettes***. Gender differences of 8.8% in favor of girls, found on this item, are not significant, but visible. Inverse, but of similar rate differences are seen for other units of purchase - almost two times more boys than girls purchase loose tobacco, with no significance of the difference attained (Table 9).

The gender differences in individual sticks purchasing are also negligible. The only significant difference is that boys purchase cartons almost three times more often than girls do (P<0.05).

Table 9: Unit of cigarette purchase among current cigarette smokers 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Unit of purchase[1]	*Percentage (95% CI)*		
Individual sticks	26.2 (20.5 - 32.7)	26.8 (17.6 - 38.6)	25.1 (17.9 - 34.0)
Pack	65.9 (60.3 - 71.1)	61.2 (51.5 - 70.2)	70.0 (61.8 - 77.2)
Carton	6.1 (3.7 - 9.9)	9.6 (6.2 - 14.6)	3.4 (1.9 - 6.1)
Loose tobacco for hand-rolled cigarettes	1.9 (0.7 - 4.5)	2.3 (0.7 - 8.0)	1.5 (0.5 - 4.8)
Total	100	100	100

[1] Based on the last purchase, among those who bought cigarettes during the past 30 days.

No significant regional differences are observed with only a tendency of Sofia students buying cigarettes more in packs or roll it from loose tobacco. No ROC students have rolled his/her own cigarettes and are buying less cartons than Sofia students do. The gender differences are close to those established nationally.

- All current smokers, boys and girls are well informed about the prices of cigarettes mainly they smoke. No regional differences have been observed. Cost of cigarettes distribution curve could be interpreted as dependent of life standard and income group students from survey belongs to (Table 10).

Table 10: Cost of cigarettes among students 13-15 years old, by gender and smoking status – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Cost of a pack (20 cigarettes)[1]	*Percentage (95% CI)*		
Less than 4 lv	9.7 (7.3 - 12.7)	12.4 (9.3 - 16.2)	6.7 (4.8 - 9.4)
4 to 5 lv	73.2 (69.5 - 76.6)	69.4 (63.9 - 74.4)	77.5 (74.8 - 80.1)
6 to 7 lv	12.2 (10.5 - 14.1)	13.2 (10.8 - 16.0)	11.0 (9.3 - 13.0)
8 to 9 lv	2.5 (1.8 - 3.4)	2.8 (1.9 - 4.0)	2.1 (1.4 - 3.2)
10 lv or more	2.5 (1.6 - 3.8)	2.2 (1.4 - 3.5)	2.6 (1.6 - 4.2)
Total	100	100	100

3.5 Media

3.5.1 Anti-Tobacco

- Half of all students (50.0%) reported having seen ***anti-smoking media messages*** during the previous 30 days with slight not significant gender differences (p>0.05) – **Table 11**.

No significant differences have been determined between regions. Regional data do not show significant gender and age variations as well (P>0.05).

Boys show to be more inclined to notice **anti-tobacco messages at sporting or community events** than girls do (23.7 % versus 18.7%), probably being more steady-going audience there. That difference, even if not at significant level, rise when data only of those who attended sporting or community events in the past 30 days is processed - 38.0 % versus 31.6 % (P>0.05).

No significant differences have been determined between regions ever if Sofia students are slightly but not significantly more receptive than ROC's to **anti-tobacco messages at sporting or community events**. Regional data do not show significant gender and age variations in groups of those who attended sporting or community events in the past 30 days (P>0.05).

- In 2015, about half of the students (53.1%), have passed through some form of **education in school about the dangers of tobacco use** (Table 11). It should be mentioned, that girls are more

receptive to this kind of education than boys ever if gender differences (4.9 %) do not reach the level of statistical significance (P>0.05).

No significant differences have been determined between regions. Regional data do not show significant gender and age variations as well (P>0.05).

Table 11: Noticing anti-tobacco information among students 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Noticing anti-tobacco information	*Percentage (95% CI)*		
Noticed anti-tobacco messages in the media[1] in the past 30 days[2]	50.0 (47.4 - 52.6)	49.2 (45.0 - 53.4)	50.8 (47.7 - 53.9)
Noticed anti-tobacco messages at sporting or community events (Among all students)	21.3 (18.5 - 24.3)	23.7 (19.8 - 28.1)	18.7 (15.2 - 22.9)
Noticed anti-tobacco messages at sporting or community events (Among those who attended sporting or community events in the past 30 days)	34.9 (30.2 - 39.8)	38.0 (32.2 - 44.1)	31.6 (25.9 - 37.9)
Taught in school about the dangers of tobacco use in the past 12 months[2]	53.1 (47.4 - 58.7)	50.7 (42.4 - 59.0)	55.6 (51.1 - 60.1)

[1] For example, television, radio, internet, billboards, posters, newspapers, magazines, movies.

[2]Among all students aged 13-15 years old.

- Almost ¾ of current smokers (72.61%) report having ***noticed health warnings on cigarette packages*** with nonsignificant gender difference of 5.1 % registered (**Table 12**).

No significant gender and age variations have been determined between regions (P>0.05). Regional data show marginally significant tendency of gender disparity in Sofia with slightly more girls than boys have noticed the health warnings (P>0.05).

Lesser number of students but not reliably significant in Sofia (61.7%) than in ROC (73.9%) have noticed health warnings on cigarette packages. This marginally significant tendency is mainly due to the variation of male's, female's and 15 years old's responses - 70.7%, 64.2% and 62.7% in Sofia versus 76.3%, 71.8% and 75.0% in ROC (P>0.05).

- About quarter of all current smokers (23.8 %), had ***thought about quitting smoking because of health warnings*** on cigarette packages with negligible gender difference of 1.4%. Numbers in the group of current smokers who noticed health warnings do not increase as expected, but about 9 % rise is similar amongst girls and boys.

Regional data on this indicator show that between the results from the two sub-samples, that obvious gender and some age group differences are established however with slight evidence of statistical significance P>0.05 (**Figure 5**).

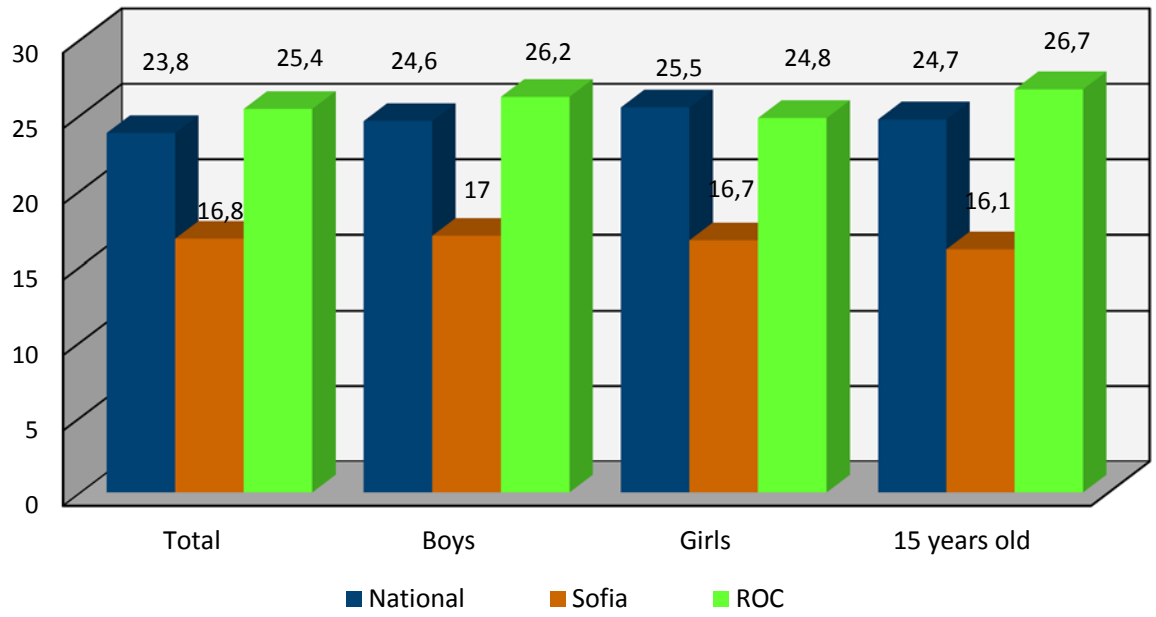


Figure 5. Current smokers who have *thought about quitting smoking because of health warnings* on cigarette packages

- Less than half of never smokers (40.6%) who noticed health warnings on cigarette packages in the past 30 days ***thought about not starting smoking because of those warnings***, with no gender and age difference registered (**Table 12**). Quite similar are the results of nonsmokers from Sofia and ROC, also without gender and age variation detected.

Table 12: Noticing of health warnings on cigarette packages among current and never smokers 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Noticing of health warnings on cigarette packages	*Percentage (95% CI)*		
Current smokers who noticed health warnings on cigarette packages†	72.6 (67.5 - 77.2)	75.4 (69.5 - 80.4)	70.3 (64.3 - 75.7)
Thought about quitting smoking because of health warnings on cigarette packages (Among current smokers who noticed health warnings)	32.8 (28.1 - 37.8)	32.6 (26.4 - 39.4)	33.0 (26.6 - 40.1)
Never smokers who thought about not starting smoking because of health warnings on cigarette packages†,1	40.6 (34.7 - 46.8)	40.6 (32.7 - 49.0)	41.1 (33.3 - 49.3)

† During the past 30 days.

1 Among never smokers who noticed health warnings on cigarette packages in the past 30 days.

3.5.2 Tobacco Marketing

- About the half of all students (50.4%), have noticed tobacco advertisements or promotions at points of sale in the month preceding the survey (**Table 13**). In the group of those who have accessed points of sale the proportion rise significantly to about 2/3 - 63.2% (P<0.05).

Evident but not significantly more students from ROC than from Sofia have remarked tobacco marketing at points of sale (69.2% and 55.6% respectively). The same pattern is held both for boys (68.7% and 52.0% respectively) and for girls (66.6% and 59.7% respectively).

When analyzing the group who has visited points of sale the percentage of students from Sofia, who noticed tobacco advertisement and promotions, rises to 69.2% and somewhat exceeds that of ROC students and the national average.

- Almost ¾ of students (74.1%) report having ***noticed anyone using tobacco on television, videos, or movies*** with negligible gender difference of 3.3 % registered (P>0.05). For those who watched television, videos, or movies in the past 30 days that number rises to vast majority of 83.6%, with no change in gender ratio. No significant gender differences are found for these indicators. (P>0.05)

Slightly but not significantly more (up to 10 percent) ROC students compared to Sofia students have noticed anyone using tobacco on television, videos, or movies during the last month (P>0.05). If taken into account the groups of children who watched TV, the data from the two sub-samples are similar and close to the national average without differences by gender and age (P>0.05).

- One out of ten students ***has ever been offered a free tobacco product*** (**Table 13**). Free products are offered to 1.5 times more, boys (13.3%) than girls (8.0%) with differences being below the level of significance.

No significant differences have been determined between regions. Regional data do not show significant gender and age variations as well (P>0.05).

Table 13: Noticing tobacco marketing among students 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Noticing tobacco marketing	*Percentage (95% CI)*		
Noticed tobacco advertisements or promotions at points of sale (Among all students in the past 30 days)	50.4 (46.6 - 54.1)	48.4 (42.4 - 54.5)	52.4 (48.7 - 56.0)
Noticed tobacco advertisements or promotions at points of sale (Among those who visite d a point of sale in the past 30 days)	63.2 (59.7 - 66.6)	64.8 (58.7 - 70.4)	61.7 (58.2 - 65.0)
Noticed anyone using tobacco on television, videos, or movies (Among all students in the past 30 days)	74.1 (71.2 - 76.7)	72.5 (67.7 - 76.8)	75.8 (73.0 - 78.4)

Noticed anyone using tobacco on television, videos, or movies (Among those who watched television, videos, or movies in the past 30 days)	83.6 (80.9 - 86.0)	85.3 (81.1 - 88.8)	81.9 (79.0 - 84.5)
Ever offered a free tobacco product from a tobacco company representative	10.8 (7.9 - 14.6)	13.2 (9.5 - 18.1)	8.0 (5.3 - 11.9)

- The 2015 survey revealed that over quarter (25.6%) of students with almost equal proportion of boys (27.3%) and girls (23.6%) ***possessed something with a tobacco brand logo on it*** (**Table 14**).

No significant differences on this indicator have been determined between regions and with the national average. Regional data do not show significant gender and age variations as well (P>0.05).

- ***Receptivity to tobacco marketing among nonsmokers.*** Never tobacco users, actual owners of such an object or those who might be in the future are 34.8% of studied population. With approximately 10 points more boys than girls could be considered highly receptive to tobacco marketing (39.1% and 29.8% respectively), the differences approaching formal significance (P>0.05)(**Table 14**).

The regional data present the same nearly significant gender tendency with 9 -10 point more boys being at risk for future tobacco use than girls. Not formally significant upward age related trend of receptivity to tobacco marketing at national and regional levels is recorded (P>0.05).

Table 14: Ownership and receptivity to tobacco marketing among students 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Ownership	*Percentage (95% CI)*		
Students who owned something with a tobacco brand logo on it[1]	25.6 (21.9 - 29.7)	27.3 (22.9 - 32.2)	23.6 (20.2 - 27.5)
Owned something with a tobacco brand logo on it or might in the future[2,3]	34.8 (29.3 - 40.8)	39.1 (31.6 - 47.1)	29.8 (24.7 - 35.5)

[1] For example, a t-shirt, pen, backpack.
[2] Those who might use or wear something that has a tobacco company or product name or picture on it.
[3] Considered highly receptive to tobacco marketing (at risk for future tobacco use).

3.6 Knowledge and Attitudes

3.6.1 Attitudes toward smoking cessation and social smoking

- Less than quarter of students, (24.1%) ***definitely think it is difficult to quit once someone starts smoking tobacco***, girls more certain than boys, leading them slightly but not significantly

with 3.2 %. (**Table 15**). The regional data present the same nearly significant gender tendency with 3.7% point in Sofia and 3.2% points in ROC more girls than boys supporting this view (P>0.05).

Not significant age related differences at national and regional levels is established (P>0.05).

- About one third of students (29.9%) think ***smoking tobacco helps people feel more comfortable at celebrations, parties, and social gathering***s with significantly higher percent of boys than girls (34.4 % vs 24.9 %) - P<0.05 (Table 16). Nearly the same percentage of students from Sofia and ROC share this opinion (32.1% and 29.9% respectively). The differences between boys and girls are only marginally significant in Sofia (34.3% and 29.9% respectively), In contrast boys in ROC are significantly more than girls with 10.5 points – 34.4% and 23.9% (P<0.05), thus explaining the significant gender differences in national data.

Not significant age related differences at national and regional levels is established (P>0.05).

Table 15: Knowledge and attitudes towards smoking cessation and social smoking among students 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Knowledge and attitudes	*Percentage (95% CI)*		
Definitely thought it is difficult to quit once someone starts smoking tobacco	24.1 (22.2 - 26.0)	22.6 (20.0 - 25.3)	25.8 (23.5 - 28.3)
Thought smoking tobacco helps people feel more comfortable at celebrations, parties, and social gatherings	29.9 (27.8 - 31.9)	34.4 (31.2 - 37.8)	243.9 (22.3 - 27.8)

3.6.3 Knowledge and attitudes toward SHS

- More than half of all students (57.1%) ***definitely think other people's tobacco smoking is harmful to them*****,** with no gender and age differences registered in 2015 survey (**Table 16**).

No significant differences in the knowledge about the harmful effect of SHS exposure have been established between regions and with the national average. Regional data do not show significant gender and age variations as well (P>0.05).

- In 2015, about 3/4 of students (76.2%), with insignificant difference between boys (75.5%) and girls (77.0 %), express an opinion ***in favour of ban of smoking inside enclosed public places***. No significant differences in the support of total ban of smoking inside enclosed public places have been established between regions and with the national average. Regional data do not show significant gender and age variations as well (P>0.05).

- ***Ban of smoking at outdoor public places*** is supported by over half of all students (55.5 %). No significant regional differences for the ban at outdoor public places support are established – 51.5% in Sofia and 56.2% in ROC (P>0.05).

Ever if almost 10 percentage points greater percent of boys than girls support the ban at national level (60.1 % versus 50.5 %), Sofia (56.5 % versus 46.2 %) and ROC (55.0 % versus 44.7%), the differences have missed narrowly statistical significance level of 0.05.

No age differences are registered in the national level and in ROC subsample (P>0.05). In Sofia significantly more 13-years old students than their 15-years old counterparts (60.1% versus 42.7%) favour indoor smoking ban (P<0.05).

Table 16: Knowledge and attitudes towards secondhand smoke among students 13-15 years old, by gender – GYTS Bulgaria, 2015

INDICATORS	Overall	Boys	Girls
Secondhand smoke	*Percentage (95% CI)*		
Definitely thought other people's tobacco smoking is harmful to them	57.1 (53.0 - 61.0)	57.8 (52.9 - 62.5)	56.5 (52.1 - 60.8)
Favored banning smoking inside enclosed public places	76.2 (72.0 - 79.9)	75.5 (69.9 - 80.3)	77.0 (73.1 - 80.4)
Favored banning smoking at outdoor public places	55.5 (51.0 - 59.8)	60.1 (55.4 - 64.6)	50.5 (45.1 - 56.0)

3.7 COMPARISON TO PREVIOUS GLOBAL YOUTH TOBACCO SURVEYS

Details for selected indicators, for which direct comparison could be done, and their changes over the three stages of the study are presented in **Table 17**.

3.7.1 Smoked tobacco use

• In term of cigarette smoking experimentation (**Figure 6**) a stable downward trend in this indicator between all 3 GYTS surveys is established – with a clear tendency to significance between the first 2 stages (65.7% in 2002 to 58.8% in 2008) and a significant drop with about 10 percentage points (48.9%) for both boys and girls experimenting with cigarettes in 2015 (P<0.05).

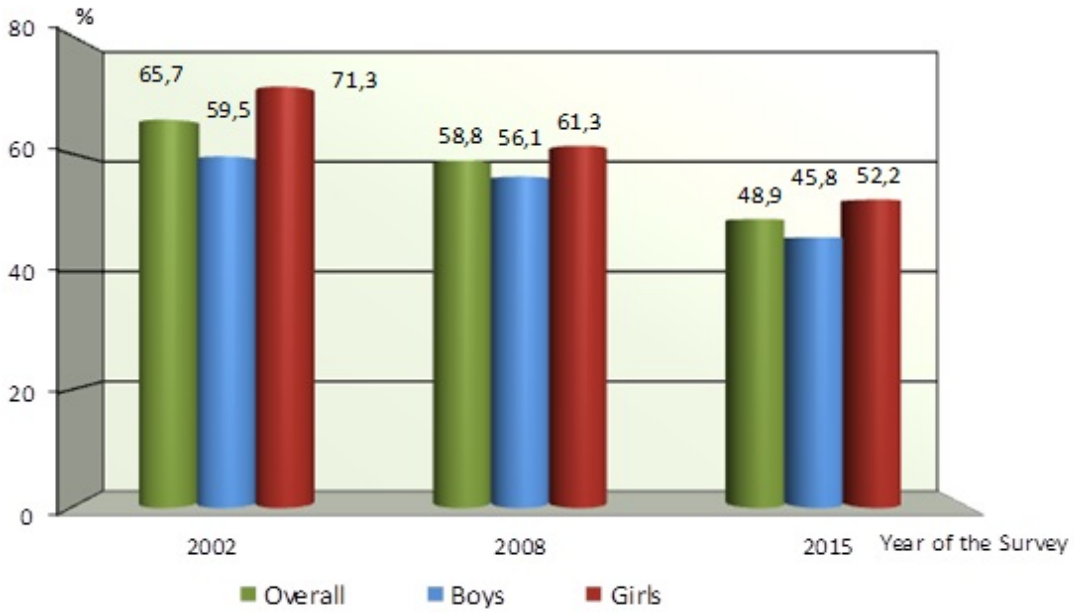


Figure 6 Prevalence of students who have ever smoked a cigarette in the three GYTS, Bulgaria Surveys

• The significant decrease of overall **current cigarette smokers' number** between the tree surveys from 33.1% in 2002 to 20.4% in 2015, and only with about 0.8 % between the last two surveys from 28.2% in 2008 to 27.4 % in 2015, is due mainly to the lower percentage of boys current smokers in 2015. Since rather small changes were observed in girls over the actual 6 years, the significance of the gender differences found in 2002 and 2008 disappear (**Figure 7**).

• The number of **frequent cigarettes smokers** (smoking 20 cigarettes daily) does not show significant changes in the 3 stage of the study – girls**,** slightly prevail over boys in the first two stages – 14.1% versus 12.9% respectively in 2002 and 16.8% versus 11.7% respectively in 2008.

In the 2015 survey the results are nearly equal – 11.5% in girls and 10.5% in boys (P>0.05) - **Figure 8.**

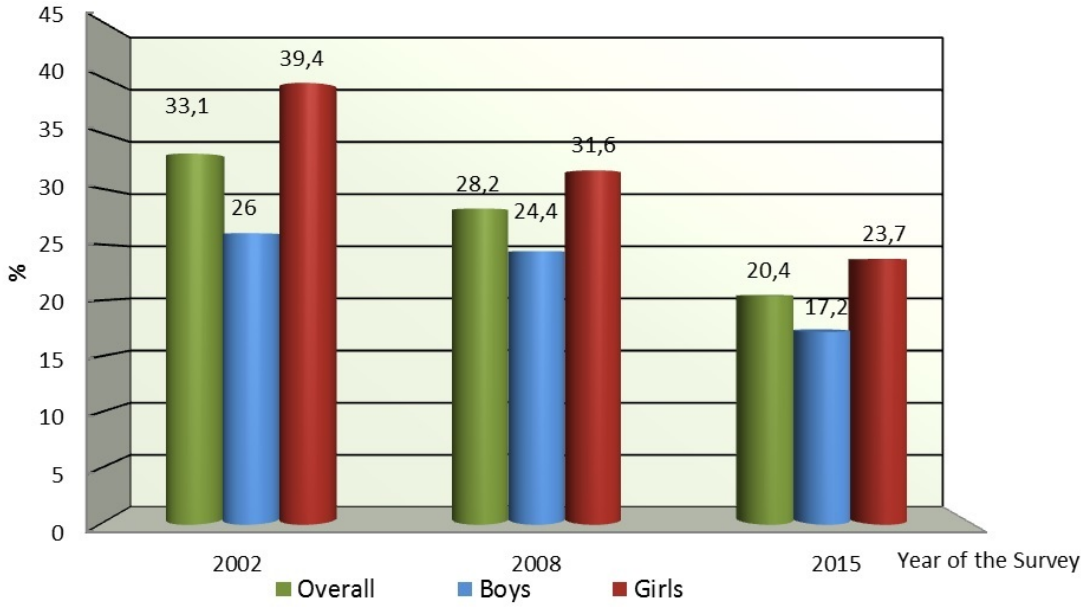


Figure 7 Prevalence of current cigarettes smokers and their changes over the three stages of GYTS, Bulgaria

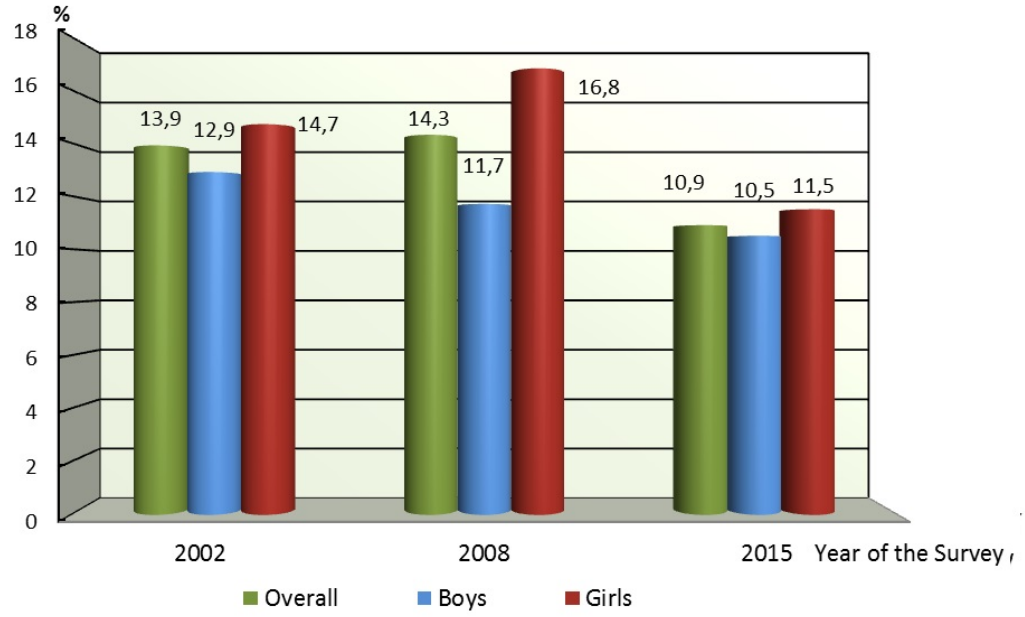


Figure 8 Proportion of frequent cigarettes smokers and their changes over the three stages of GYTS, Bulgaria

An insignificant downward trend in the prevalence of **current tobacco users** is established in about 3 out of 10 students throughout the three GYTS, Bulgaria surveys – 34.3% in 2002, 29.3% in 2008 and 28.8% in 2015 (P>0.05). The proportion of girls to some extent exceed the proportion of boys in all three phases of the survey with 10.6 points in 2002 and with 5.4 to 5.7 in the latest phases of 2008 and 2015 respectively (P>0.05) - **Table 18.**

- An upward trend in **susceptibility indicator** between the first two stages data are observed, (from 29.2 % in 2002 to 31.2 % in 2008), similar for both gender groups (respectively from 25.5 % to 27% for boys and from 34.3% to 36.4 % for girls), ever if the differences do not reach the level of statistical significance (P>0.05). Observed significant decrease between 2008 and 2015 in the susceptibility indicator (20.2% in 2015) is due to a downward trend in both genders (10 points for boys and 12.7 in girls) (P<0.05) – **Figure 8**.

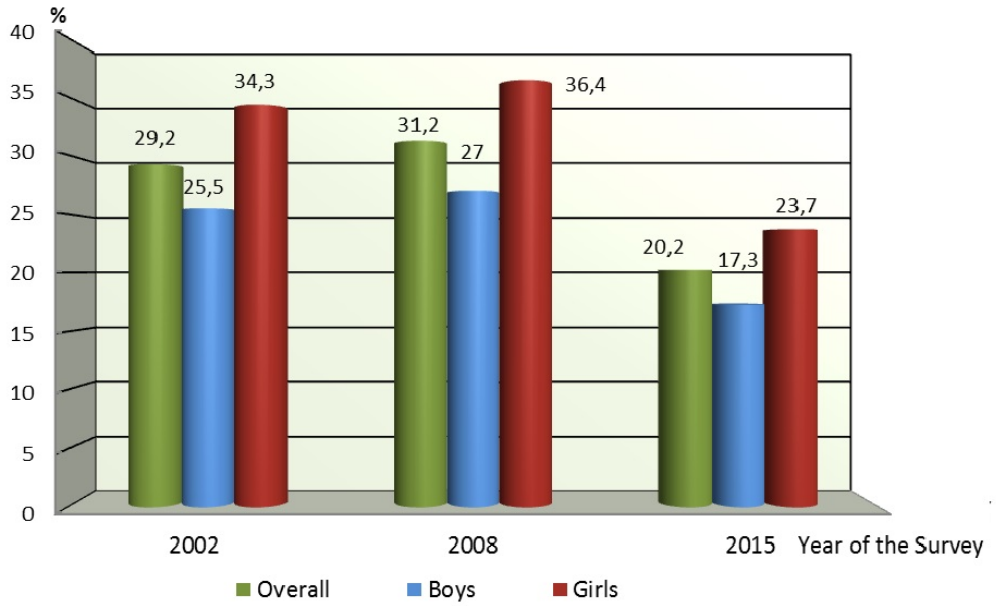


Figure 8 Trend in susceptibility indicator in the three GYTS, Bulgaria Surveys

3.7.2 Cessation

- After obvious, but nonsignificant 10-point drop (from 68.4 % in 2002 to 57.8 % in 2008) between the two first studies, an insignificant increase of about 4% of the overall percentage of those who **tried to stop smoking in the past 12 months** is observed over the six years period to 2015 (from 57.8 % to 61.9% respectively in 2008 and 2015), due mainly to changes in boys – from 60.0 % to 66.1% of those, who tried to stop smoking in the past 12 months (**Figure 9**).

After similarly nonsignificant over 10-point drop (from 60.6 % in 2002 to 49.1 % in 2008) between the two first studies, changes over the six years period to 2015 conceive an insignificant decrease of the overall percentage of those who **want to quit** - 49.1% in 2008 and

48.1% in 2015. However, in girl's sub-samples trend is reversed and that percent slightly insignificantly increased - 48.8% in 2008 and 50.1% in 2015 (P>0.05) – **Figure 10.**

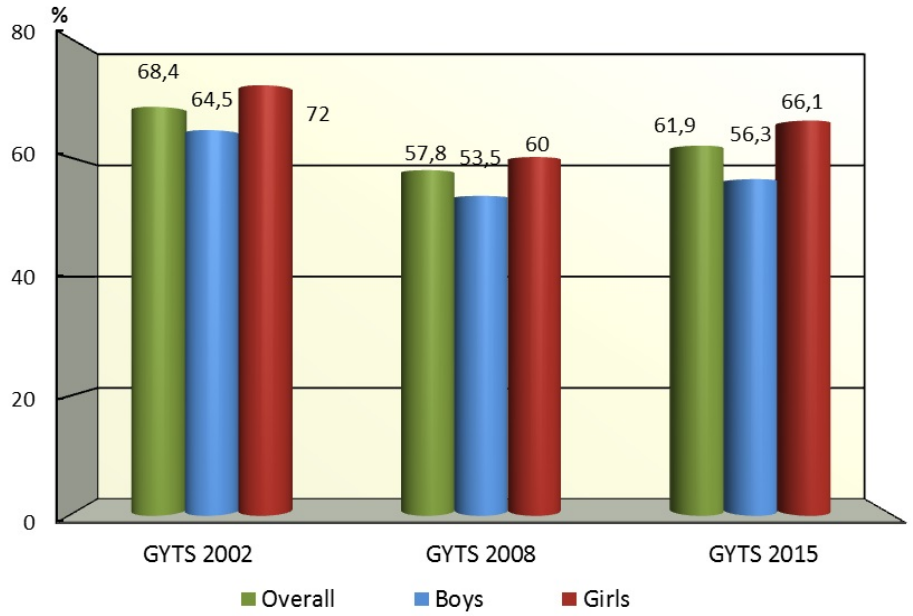


Figure 9 Trend in the pproportion of current smokers who tried to stop smoking in the past 12 months over the three stages of GYTS, Bulgaria Survey

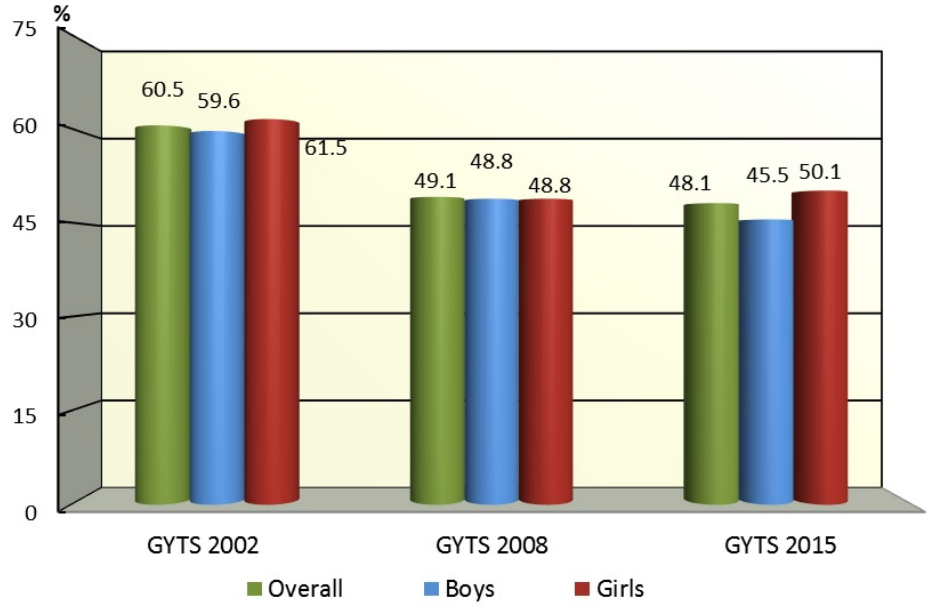


Figure 10 Proportions of current smokers who want to quit in the past 12 months and their changes over the three stages of GYTS, Bulgaria

- A highly controversial tendency could be observed among those, who **thought they would be able to stop (Figure 11)**. After significant over than twofold drop (from 88.2 % in 2002 to 37.9 % in 2008) at first 2 stages of survey, percentage of those who thought they would be able to stop doubled again during six years period to 2015 (from 37.9 % in 2008 to 79.8% in 2015). The most impressive changes could be seen in girls – from 91.6 % in 2002 to 28.5% in 2008 and then again rise to 83.6 % in 2015.

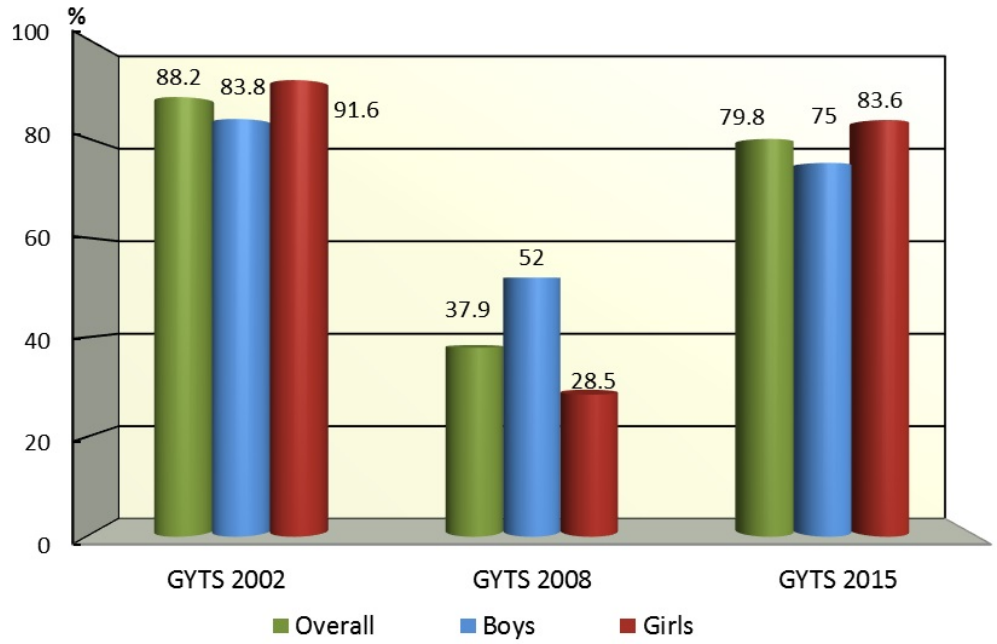


Figure 11 Changes in the number of students, who thought they would be able to stop smoking if they want to over the three stages of GYTS, Bulgaria

3.7.3 SHS exposure

- Slight difference in **SHS exposure in home** (from 67.7% in 2002 to 63.9% in 2008) increase to over 13 points (from 63.9% in 2008 to 50.8% in 2015) at the recent stage of survey. Girls still stay more in danger of SHS than boys do with about 7 points higher exposure than in boys' group (**Figure 12**).
- Insignificant decrease of 5.6% of students that reported exposure to secondhand smoke in **any enclosed public places** is shown between the two first stages of survey (from 75.7% in 2002 to 70.1% in 2008). That percentage in 2015 (50.6%) is significantly lower than in 2008 (70.1%), ($P<0.05$) and decline is more obvious in boys (21.5 points) than in girls (17.1 points) - **Figure 13**.
- Exposure to SHS at home and in enclosed public places has significantly decreased between 3 survey stages, however 50.8% for homes and 50.6% for enclosed public places in 2015 is still **inadmissibly high**, especially for indoor public places where a total ban of smoking is introduced in 2012;

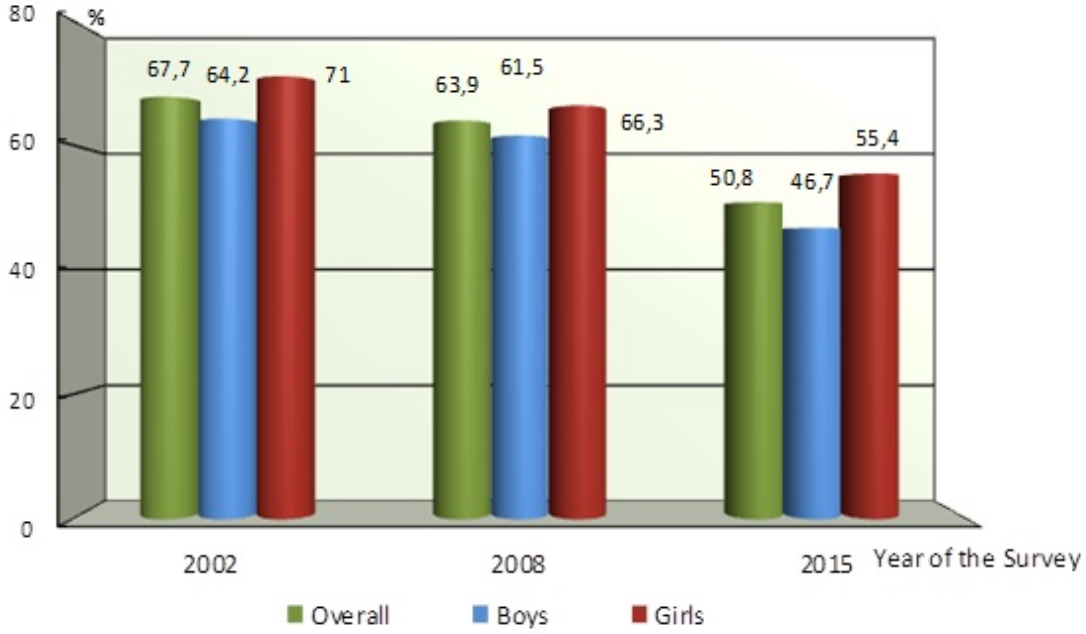


Figure 12 Changes in home SHS exposure over the three stages of GYTS, Bulgaria

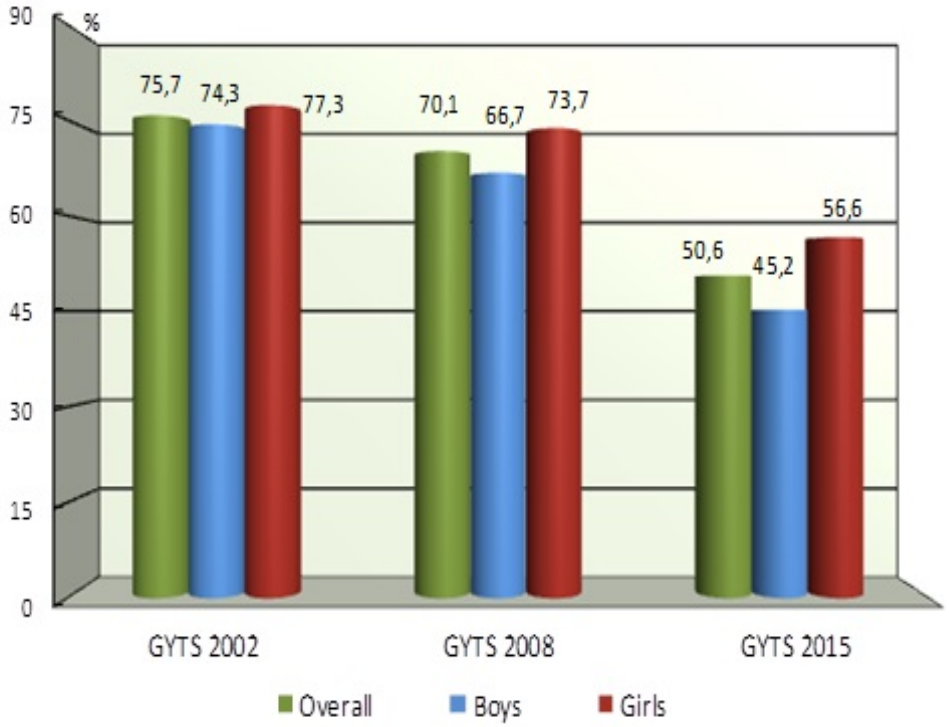


Figure 13 Changes in SHS in any enclosed public places over the three stages of GYTS, Bulgaria

3.7.4 Access & availability

Compared data reveals steady rise of this indicator in term of **"buying cigarettes from a store"** (**Figure 14**) between 2002 and 2015 (from 61.9% in 2002 through 68.6 % in 2008 to 70.1 % in 2015). Between last two stages changes are more obvious for males (by 10.2%) with also insignificant decrease in recent stage for females (3. 9% at the same period) (P>0.05)

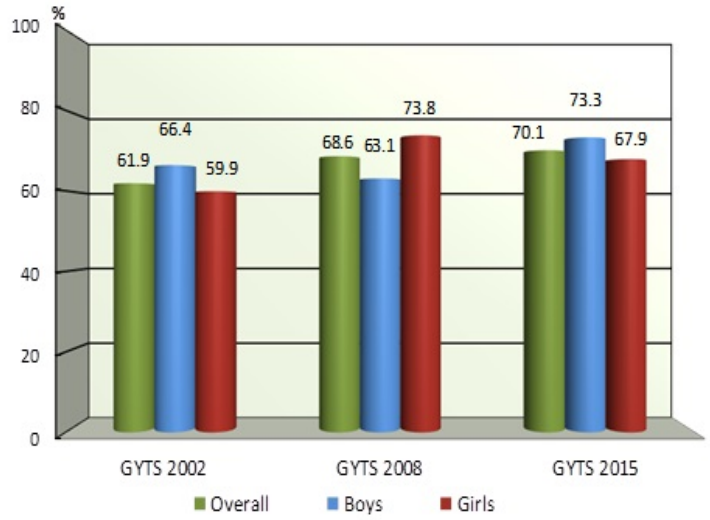


Figure 14 Changes in possibility for cigarette supply from a store/shop over the three stages of GYTS, Bulgaria

- After slight insignificant initial decrease from 74.5 % in 2002 to 67.9% in 2008, due to 15 point drop in girls' group (from 81.2% in 2002 to 65.7% in 2008), the number of students **buying their cigarettes without being hindered** remains stable over the time with 68.5% in 2015 for the total studied population and no significant gender differences (P>0.05).

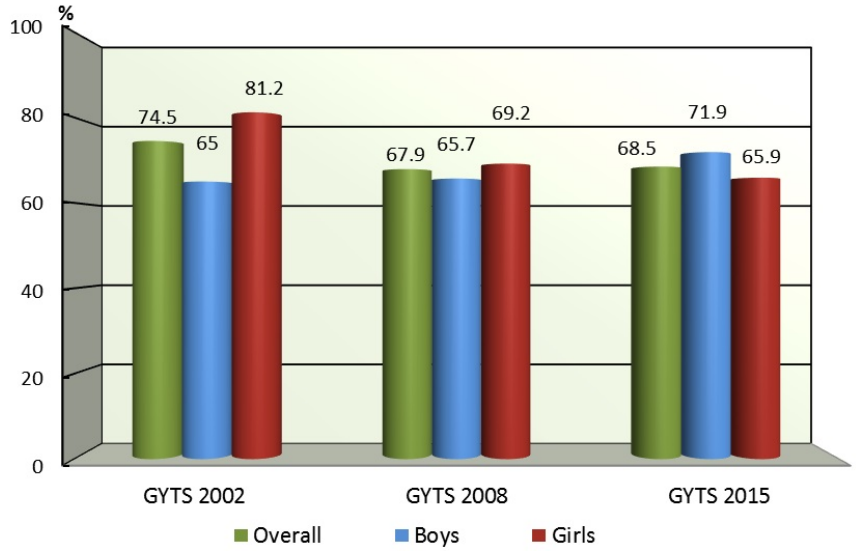


Figure 15 Changes in number of students buying their cigarettes without being disturbed over the three stages of GYTS, Bulgaria

3.7.5 Media

Anti-smoking messages in media

- After inspiring significant upward shift of about 23% between first two stages of the survey (from 65.0% in 2002 to 87.5% in 2008) surprisingly marked decrease in proportion of students stated seeing **anti-smoking messages at the different media channels** is observed, from 87.5% to 50.0% in 2015, respectively (P<0.05). This shift is more obvious for boys (37 points decrease), than for girls (26.3 points), although gender differences tend to 1 % through last two stages (P>0.01) - **Figure 16**.

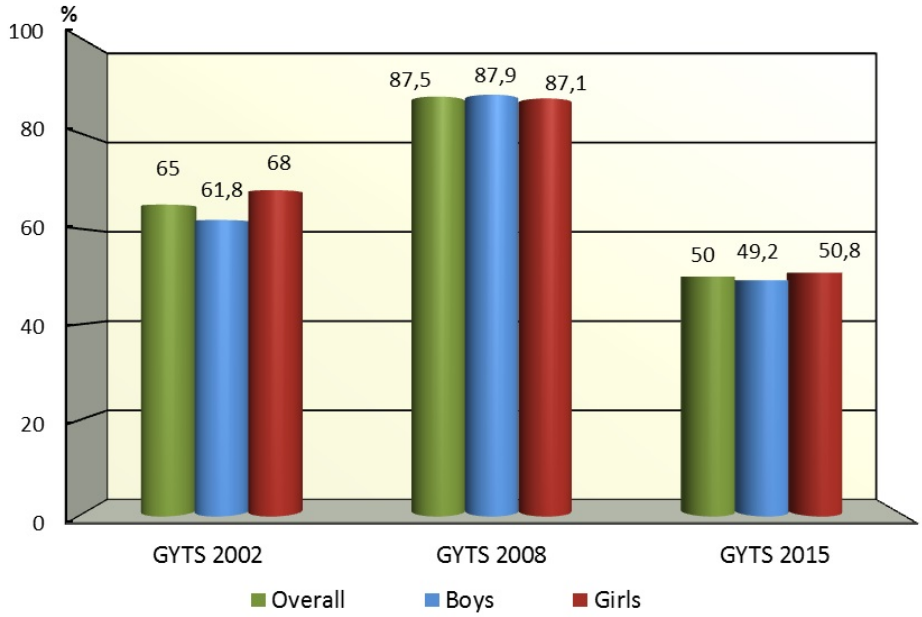


Figure 16 Changes in number of those, who noticed anti-smoking messages at different media channels over the three stages of GYTS, Bulgaria

- Nevertheless, the same as described above trend of decreasing number of those who notice **anti-tobacco messages at sporting or community events** could be seen over the stages of survey. From 68.7% in 2002 it dropped to 51.9% in 2008 and then with another 18% to about a one-third (34.9%) of studied group in 2015 (**Figure 17**).

- Since 2002 -2008 stages mild rise of 6.5% (respectively from 62.2% to 68.7%) a significant downward shift of 15.6 points (from 68.7 % in 2008 to 53.1% in 2015) in the **integration of these topics in school curriculum** is registered (P<0.05). Stable, non-significant gender differences of about 6% are recorded (**Figure 18**).

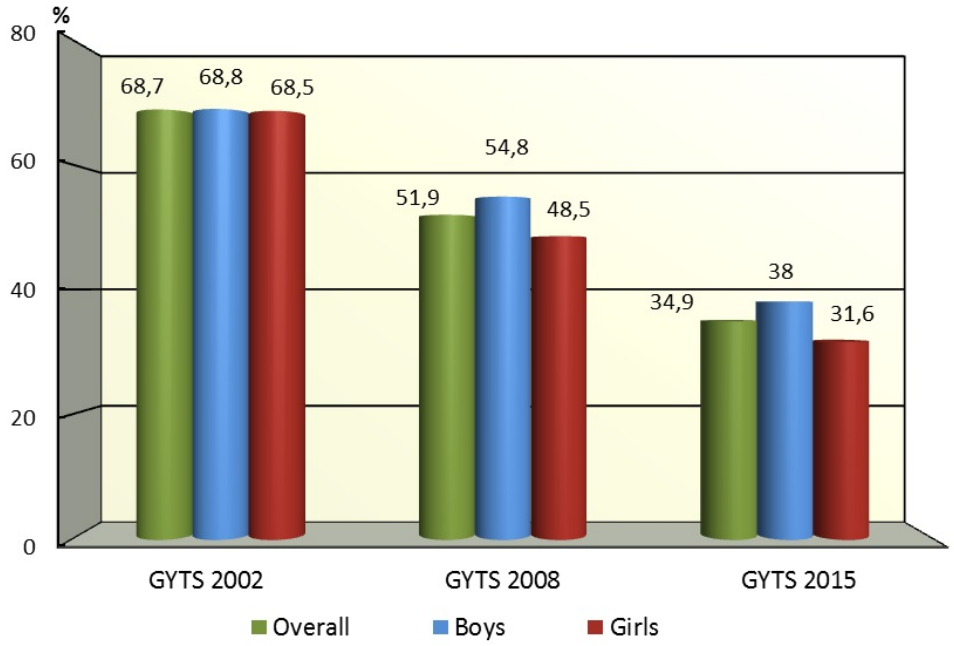


Figure 17 Changes in exposure to anti-smoking messages at sporting or community events over the three stages of GYTS, Bulgaria

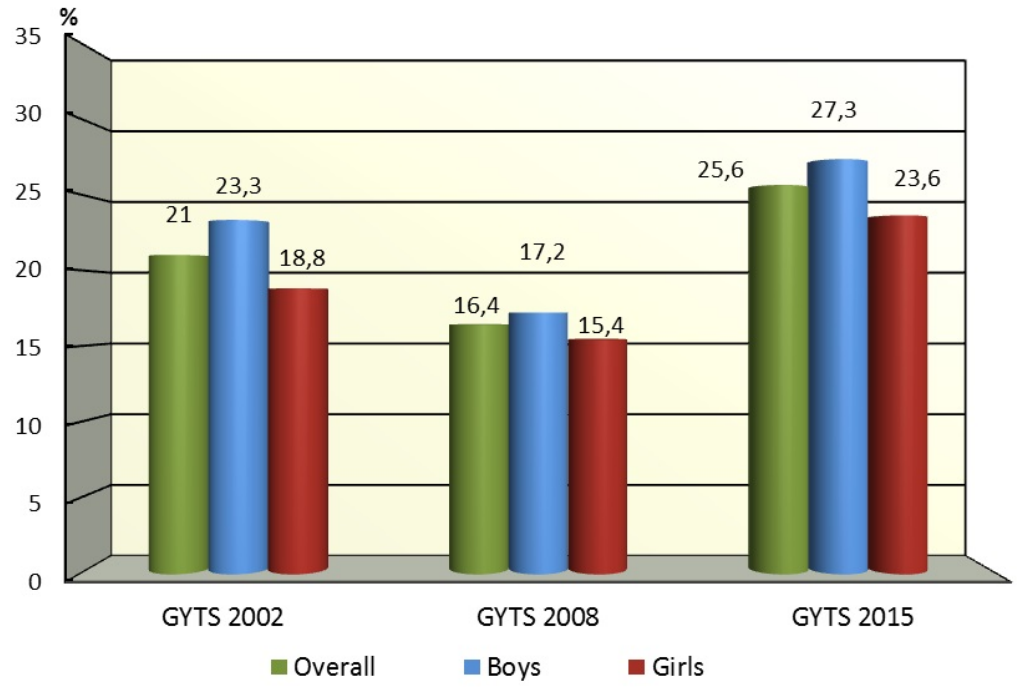


Figure 18 Changes in receptivity to school anti-smoking education over the three stages of GYTS, Bulgaria

3.7.6 Tobacco Industry Advertising

- The number of students who have **noticed anyone using tobacco on television, videos, or movies** are significantly lower in 2015 survey than that of 2002 and 2008 surveys (respectively 83.6 % and vs. 93.2 % and 87.2 %), with turnover in stable gender ratio at third stage, when boys goes before girls with the same insignificant 4 points they fell behind at first two stages.

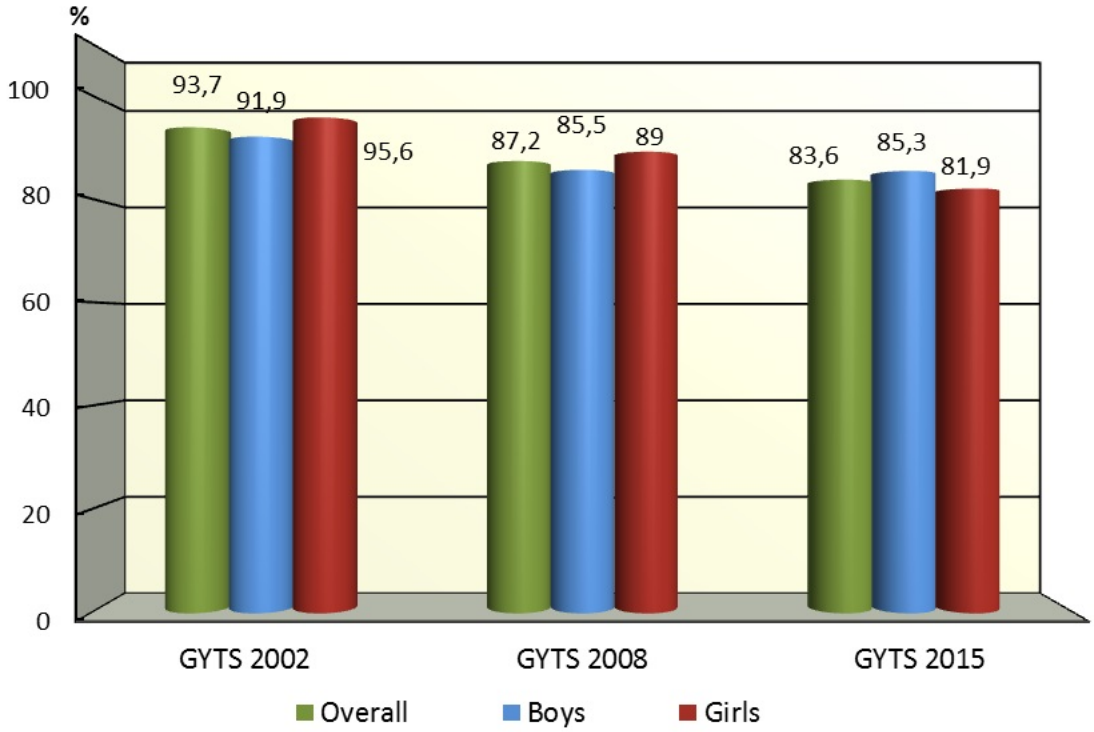


Table 19 Exposure to media advertisement of tobacco products - television, videos, or movies over the three stages of GYTS, Bulgaria

- At every stage of survey relatively few students (7.2% in 2002, 10.2 % in 2008 and 10.8% in 2015) have been **offered a free cigarette by a tobacco representative**, with slightly rising insignificant gender difference, highest in 2015, when boys (13.2%) goes before girls (8.0%), almost faithfully reproducing 2008 survey data (**Figure 20)**.

- Concerning the **ownership of an object with a tobacco brand logo on it (Figure 21)** it could be noted that after initial slight insignificant decrease of less than 5% (from 21.0% in 2002 to 16.4 % in 2008) an upward shift of almost 10 points between the recent two stages data are observed (from 16.4 % in 2008 to 25.6% in 2015), especially in boys' group, even if the differences do not reach the level of statistical significance (P>0.05).

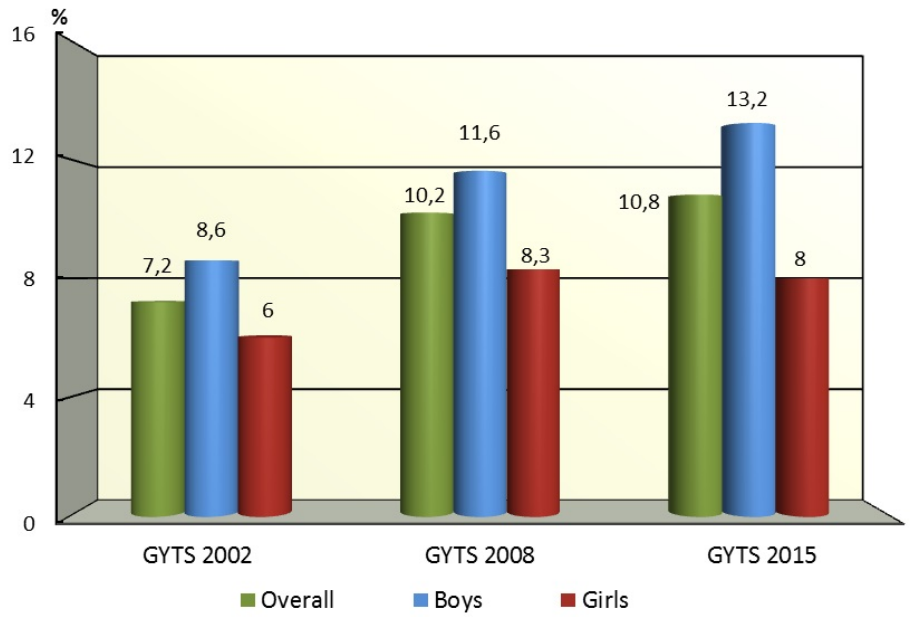


Table 20 Changes in exposure to tobacco promotions (free tobacco products) over the three stages of GYTS, Bulgaria

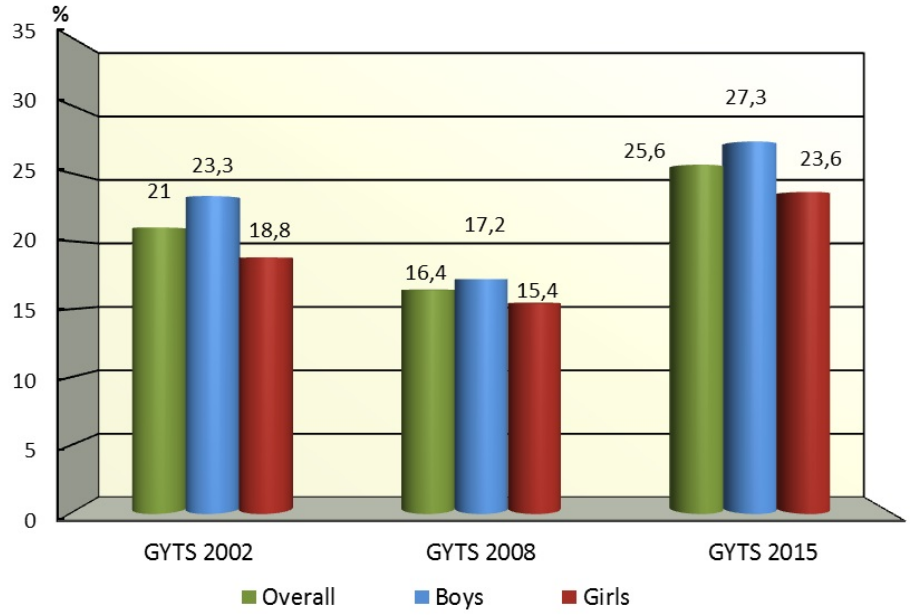


Figure 21 Changes in number of students owned an object with a tobacco brand logo on it over the three stages of GYTS, Bulgaria

3.7.7 Knowledge & attitudes

- The percentage of students who definitely **think that tobacco smoke is harmful for their health** (**Figure 22**) in 2008 is significantly higher compared to 2002 (68.1% and 62.2% respectively).The smallest number of students considering the harm of smoking for their health is observed in 2015 survey - 57.1% with about equal proportions of boys and girls (P>0.01).

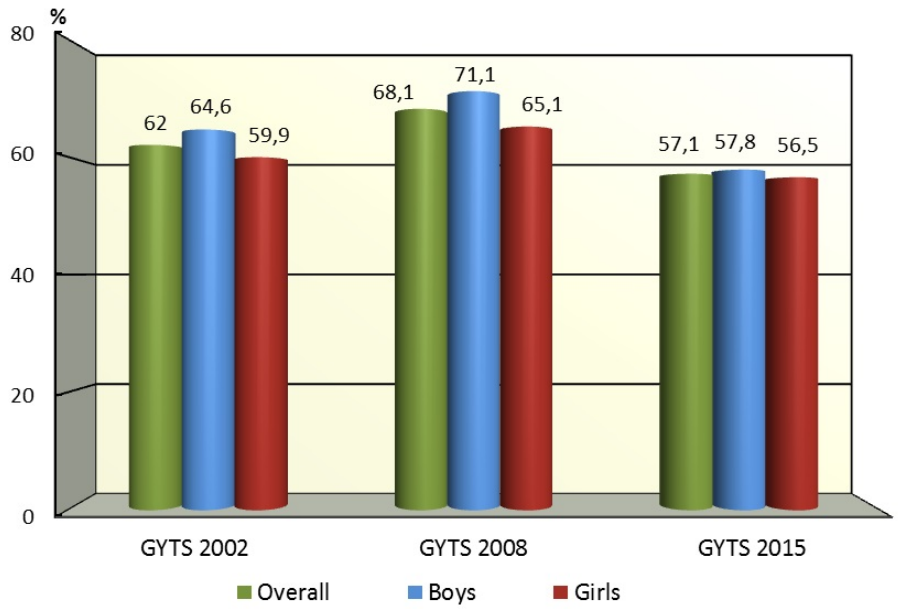


Figure 22 Changes in knowledge and attitudes towards secondhand smoke over the three stages of GYTS, Bulgaria

- During the first 2 stages of GYTS, Bulgaria about ¾ of students **support the ban on smoking in enclosed public places** with insignificantly more boys than girls do (P>0.05). In 2015 this support rises and 1.2 time more students are in favor of totally banned enclosed public places. Such opinion share 2 points more girls than boys (P>0.05) - **Figure 23.**

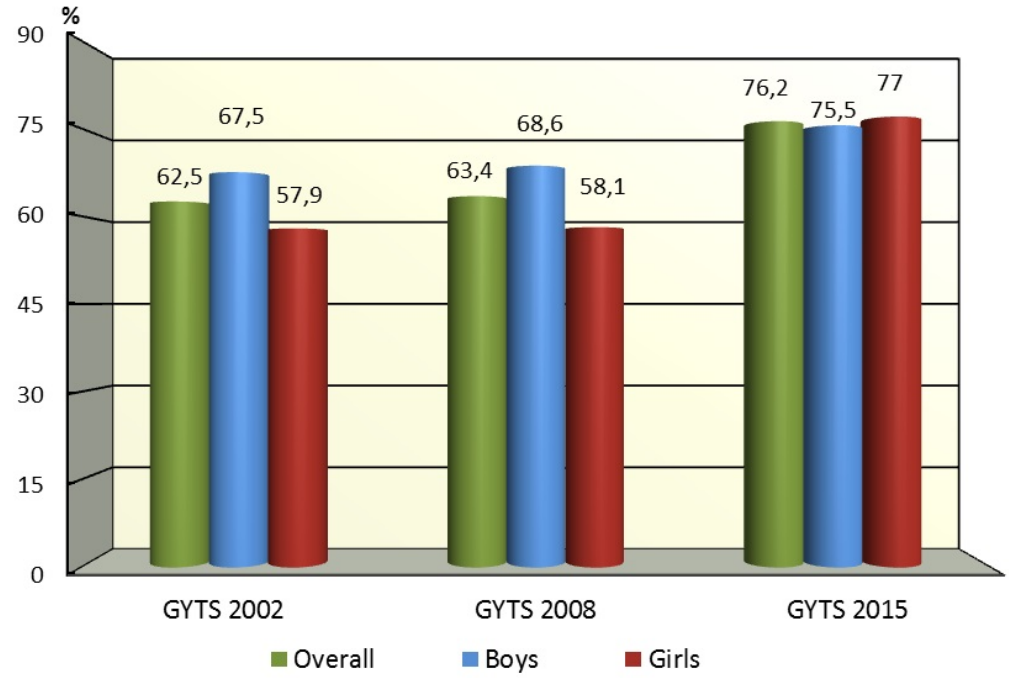


Figure 23 Changes in percentage of students who support the ban on smoking in enclosed public places over the three stages of GYTS, Bulgaria

Table 17. Trends in the results of GYTS Bulgaria, 2002, 2008 and 2015

	Bulgaria_2002			Bulgaria_2008			Bulgaria_2015		
TOBACCO USE	Overall	Boys	Girls	Overall	Boys	Girls	Overall	Boys	Girls
Smoked Tobacco									
Ever cigarette smokers	65.7 (61.8 - 69.4)	59.5 (53.9 - 64.8)	71.3 (66.0 - 76.2)	58.8 (53.3 - 64.1)	56.1 (49.8 - 62.2)	61.3 (54.5 - 67.7)	48.9 (44.6 - 53.1)	45.8 (41.1 - 50.5)	52.2 (46.5 - 57.8)
Current cigarette smokers	33.1 (30.1 - 36.3)	26.0 (21.6 - 30.8)	39.4 (34.2 - 44.9)	28.2 (24.1 - 32.7)	24.4 (20.2 - 29.2)	31.6 (25.9 - 37.9)	20.4 (16.6 - 24.8)	17.2 (12.7 - 22.9)	23.7 (19.5 - 28.5)
Frequent cigarette smokers	13.9 (11.8 - 16.4)	12.9 (9.8 - 16.7)	14.7 (11.9 - 18.1)	14.3 (12.0 - 17.0)	11.7 (9.6 - 14.2)	16.8 (13.3 - 21.0)	10.9 (8.0 - 14.8)	10.5 (6.8 - 15.7)	11.5 (8.5 - 15.3)
Tobacco Use									
Current tobacco users	34.3 (31.2 - 37.5)	28.6 (24.5 - 33.0)	39.2 (34.3 - 44.4)	29.3 (25.3 - 33.6)	26.4 (21.9 - 31.5)	31.8 (26.6 - 37.6)	28.8 (24.0 - 34.1)	27.4 (20.9 - 35.1)	30.1 (25.6 - 35.1)
Susceptibility									
Never tobacco users susceptible to tobacco use[2]	29.2 (25.0 - 33.8)	25.5 (20.8 - 30.8)	34.3 (27.8 - 41.3)	31.2 (28.8 - 33.7)	27.0 (24.3 - 29.9)	36.4 (31.2 - 42.0)	20.2 (17.7 - 22.9)	17.3 (13.5 - 21.8)	23.7 (19.9 - 28.0)
CESSATION									
Tried to stop smoking in the past 12 months[1]	68.4 (62.2 - 74.0)	64.5 (54.4 - 73.4)	72.0 (65.0 - 78.2)	57.8 (52.5 - 63.0)	53.5 (45.3 - 61.5)	60.0 (53.5 - 66.2)	61.9 (56.6 - 66.9)	56.3 (47.9 - 64.3)	66.1 (60.1 - 71.5)
Want to stop smoking now[1]	60.5 (53.6 - 67.1)	59.6 (49.9 - 68.6)	61.5 (53.4 - 68.9)	49.1 (42.5 - 55.8)	48.8 (40.9 - 56.7)	48.8 (38.0 - 59.7)	48.1 (40.2 - 56.1)	45.5 (33.4 - 58.3)	50.1 (41.7 - 58.4)
Thought they would be able to stop[1]	88.2 (84.9 - 90.8)	83.8 (76.3 - 89.2)	91.6 (86.6 - 94.9)	37.9 (29.6 - 47.0)	52.0 (36.3 - 67.4)	28.5 (21.0 - 37.4)	79.8 (73.1 - 85.2)	75.0 (62.8 - 84.2)	83.6 (78.8 - 87.4)
SECONDHAND SMOKE									
Exposed to tobacco smoke at home[4]	67.7 (64.9 - 70.4)	64.2 (60.1 - 68.2)	71.0 (67.0 - 74.6)	63.9 (60.1 - 67.5)	61.5 (57.2 - 65.7)	66.3 (62.1 - 70.3)	50.8 (46.2 - 55.4)	46.7 (41.1 - 52.3)	55.4 (50.7 - 60.0)
Exposed to tobacco smoke inside any enclosed public place[4§]	75.7 (73.0 - 78.3)	74.3 (70.6 - 77.7)	77.3 (73.3 - 80.9)	70.1 (66.3 - 73.5)	66.7 (63.1 - 70.2)	73.7 (68.3 - 78.4)	50.6 (47.2 - 54.1)	45.2 (41.5 - 49.0)	56.6 (51.5 - 61.5)
ACCESS AND AVAILABILITY									
Buying them from a store[†]	61.9 (56.4 - 67.1)	66.4 (58.8 - 73.3)	59.9 (52.0 - 67.4)	68.6 (61.5 - 74.9)	63.1 (54.3 - 71.2)	73.8 (68.0 - 79.0)	70.1 (64.9 - 74.8)	73.3 (59.6 - 83.6)	67.9 (60.2 - 74.6)
Not prevented from buying cigarettes because of their age	74.5 (66.0 - 81.5)	65.0 (55.1 - 73.7)	81.2 (71.3 - 88.2)	67.9 (63.9 - 71.7)	65.7 (54.9 - 75.0)	69.2 (62.3 - 75.3)	68.5 (60.7 - 75.4)	71.9 (59.1 - 82.0)	65.9 (59.2 - 72.0)

MEDIA									
Tobacco Industry Advertising									
Noticed anyone using tobacco on television, videos, or movies	93.7 (92.8 - 94.4)	91.9 (90.5 - 93.1)	95.6 (93.8 - 96.8)	87.2 (84.6 - 89.4)	85.5 (82.9 - 87.8)	89.0 (85.3 - 91.9)	83.6 (80.9 - 86.0)	85.3 (81.1 - 88.8)	81.9 (79.0 - 84.5)
Ever offered a free tobacco product from a tobacco company[3]	7.2 (5.3 - 9.8)	8.6 (6.3 - 11.6)	6.0 (3.9 - 9.2)	10.2 (8.6 - 12.0)	11.6 (9.3 - 14.4)	8.3 (6.7 - 10.2)	10.8 (7.9 - 14.6)	13.2 (9.5 - 18.1)	8.0 (5.3 - 11.9)
Owned something with a tobacco brand logo on it	21.0 (19.0 - 23.3)	23.3 (19.8 - 27.1)	18.8 (15.5 - 22.7)	16.4 (14.6 - 18.4)	17.2 (14.2 - 20.6)	15.4 (13.5 - 17.5)	25.6 (21.9 - 29.7)	27.3 (22.9 - 32.2)	23.6 (20.2 - 27.5)
Anti-Tobacco Advertising									
Anti-tobacco messages in the media	65.0 (61.3 - 68.5)	61.8 (57.7 - 65.8)	68.0 (63.5 - 72.1)	87.5 (86.0 - 88.8)	87.9 (86.2 - 89.4)	87.1 (84.8 - 89.1)	50.0 (47.4 - 52.6)	49.2 (45.0 - 53.4)	50.8 (47.7 - 53.9)
Anti-tobacco messages at sporting or community events	68.7 (66.1 - 71.2)	68.8 (65.4 - 72.1)	68.5 (65.2 - 71.7)	51.9 (49.6 - 54.3)	54.8 (51.6 - 57.9)	48.5 (45.7 - 51.3)	34.9 (30.2 - 39.8)	38.0 (32.2 - 44.1)	31.6 (25.9 - 37.9)
Taught in school about the dangers of tobacco use	62.2 (56.9 - 67.2)	61.1 (55.3 - 66.6)	63.1 (57.0 - 68.8)	68.7 (65.0 - 72.1)	65.8 (62.1 - 69.4)	72.0 (66.9 - 76.6)	53.1 (47.4 - 58.7)	50.7 (42.4 - 59.0)	55.6 (51.1 - 60.1)
KNOWLEDGE AND ATTITUDES									
Definitely thought other people's tobacco smoking is harmful to them	62.0 (59.0 - 65.0)	64.6 (61.1 - 68.0)	59.9 (55.7 - 63.9)	68.1 (66.0 - 70.1)	71.1 (68.6 - 73.4)	65.1 (61.1 - 68.8)	57.1 (53.0 - 61.0)	57.8 (52.9 - 62.5)	56.5 (52.1 - 60.8)
Favored banning smoking inside enclosed public places[§]	62.5 (59.7 - 65.2)	67.5 (64.3 - 70.6)	57.9 (53.8 - 62.0)	63.4 (59.5 - 67.1)	68.6 (65.8 - 71.3)	58.1 (51.9 - 64.0)	76.2 (72.0 - 79.9)	75.5 (69.9 - 80.3)	77.0 (73.1 - 80.4)

* Cell size is less than 35

1 Among current cigarette user/2015 among current smoked tobacco user

2 Among current cigarette user/2015 among current tobacco user

3 Cigarette brand/2015 tobacco brand

4 During past 7 days (in 2015)

¶ products in the past 30 days

§ Enclosed or outdoor public places/2015 Enclosed public places

† 2015 source from a store, shop or street vendor

4. DISCUSSION

4.1 Discussion of Survey Findings

Adolescence is a key period of human development. Behavior patterns of great consequence for later life are established during this time. In particular, adoption of unhealthy lifestyle in terms of smoking and drinking is known to cause future health problems that will reduce both life expectancy and quality of life, originate in this age stage. For instance if individuals do not initiate smoking during this period it is unlikely they ever starts[26], thus smoking could be referred as "pediatric disease"[27] with latter consequences.

The GYTS-2015 turns up after a 14-years period when some major tobacco control law and prevention events occur in Bulgaria. In the meantime, Bulgaria has signed the WHO Framework Convention for Tobacco Control (FCTC) in December 2003 and ratified it in November 2005 (10). The stage I of GYTS has been completed close to the launch of the first National Program for Reducing Tobacco Use in Bulgaria, 2002- 2005 and stage II of GYTS - close to launch of the second National Program for Reducing Tobacco Use 2007-2010. The two stages GYTS' data have been analyzed and presented to the leading stakeholders from the Ministry of Health, the Parliament and the Government. Thus, they have served as a basis for preventive activities in the frame of two National Programs for Reducing Tobacco Use in Bulgaria. The second of which, have started after the ratification of FCTC with strategic goal to implement its decisions for improving the population health by decreasing morbidity and mortality from tobacco related diseases and by gradually lowering smoking prevalence, especially among adolescents (6,11).

Nowadays, Bulgaria possesses a legal and institutional framework for tobacco control with EU directives transposed into its national legislation. The National Health Strategy 2014-2020 and the National Program for Chronic Non-communicable Diseases Prevention 2014-2020, focused on multiple NCD risk factors with smoking prevention on a leading position, have started with a situational analysis of adult and youth smoking patterns in 2014-2015, as a basis for improved and enhanced preventive measures, based on the results.

The WHO FCTC calls for countries to use consistent methods and procedures in their surveillance efforts. The GYTS was designed for precisely this purpose (that is, standardized sampling procedures, core questionnaire items, training in field procedures, and analysis of data, all of which are consistent across all survey sites). On the other hand, MPOWER requires "that proven tobacco policies and interventions be implemented, that they be informed by data

[26] USDHHS: Preventing tobacco Use among youth and young adults: a report of the Surgeon General. 2012, US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, Atlanta

[27] American Academy of Pediatrics. Tobacco use: a pediatric disease. Pediatrics. 2009;124(5):1474–87.
Binns HJ, Forman JA, Karr CJ, Paulson JA, Osterhoudt KC, Roberts JR, Sandel MT, Seltzer JM, Wright RO, Best D, Blackburn E. Tobacco Use: A Pediatric Disease (vol 124, pg 1474, 2009). Pediatrics. 2010 Apr 1;125(4):861-.

from systematic surveys designed to target and refine implementation, and that rigorous monitoring is done to evaluate their impact"[28]. Thus GYTS provides indicators for assessing achievement of five elements of MPOWER interventions based on the FCTC (namely, monitoring, exposure to secondhand smoke, school-based tobacco control curricula, cessation, media and advertising, and minors' access and availability to tobacco products)[29].

From this angle, the findings from GYTS 2015 could be used to continue the monitoring and are discussed relative to relevant FCTC articles, MPOWER interventions and tobacco control efforts in Bulgaria.

4.1.1 Prevalence

- In this previously stated framework 55.5% of all students in GYTS study, 2015 ***have ever smoked tobacco***, with ***cigarettes*** being the most common tobacco product they have experimented with (48.9%). Data from available literature point on the fact that even experimental smoking in adolescence significantly increases the risk of adult smoking[30].

In term of cigarette smoking experimentation when results from 2015 are compared to those from earlier data collection, a stable significant downward trend in this indicator between all 3 GYTS stages is established with 12.7% less cigarette experimenters between 2002 and 2015, when the girls to boys ratio falls and turns to insignificance (52.2% versus 45.8%). Our results are consistent with no gender differences found in most recent available data from other European countries (Ukraine, Croatia, Latvia and Spain)[31,32].

As in other studies[33], the *age trend* is typical for experimentation in this particularly sensitive group – for instance from 13 to 15 years of age, the percentage of smoking experiences raises significantly - 4.5 times more for any tobacco product and 3 times more for cigarettes.

Indicative for GYTS survey 2015 is the difference of these curves that reflect the experimentation tendency shifted into the new for the Bulgarian market tobacco products. For instance, one third of ever smoker perform their first experimentations - for instance *shisha* (36.2%) *and e-cigarettes* (32.7%). At this point practically no gender difference is established,

[28] World Health Organization. WHO Framework Convention on Tobacco Control. Geneva, Switzerland: World Health Organization, 2003 (updated reprints 2004, 2005). Available at: http://www.who.int/tobacco/framework/WHO_FCTC_ english.pdf (Accessed on 26.02.16).
[29] World Health Organization. WHO report on the global tobacco epidemic, 2008: the MPOWER package. Geneva, World Health Organization, 2008. Available at: http://www.who.int/tobacco/mpower/mpower_report_full_2008.pdf. (accessed on 14.11.205)
[30] U.S. Department of Health and Human Services. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2012.
[31] CDC Global Tobacco Surveillance System Data (GTSSData).GYTS. Availlable at: http://nccd.cdc.gov/GTSSData/Ancillary/DataReports.aspx?CAID=1
[32] García-Rodríguez O, Suárez-Vázquez R, Secades-Villa R, Fernández-Hermida JR. Smoking risk factors and gender differences among Spanish high school students. J Drug Educ. 2010;40(2):143-56.
[33] Hsing-Yi, Chang HY, Wu WC, Wu CC, Cheng JY, Hurng HB, Yen LL. The incidence of experimental smoking in schoolchildren: an 8-year follow-up of the child and adolescent behaviors in long-term evolution (CABLE) study. . BMC Public Health 2011, 11:844. DOI: 10.1186/1471-2458-11-844. Available at: http://www.biomedcentral.com/1471-2458/11/844

but with significantly more students in Sofia (49.0%) than in ROC (33.6%), having reported shisha experimentation. No regional differences in e-cigarettes experimentation are found. Moreover, recent survey of Barrington-Trimis et al, demonstrate that experimental e-cigarette use in never-smoking youth may increase risk of subsequent initiation of cigarettes and other combustible products during the transition to adulthood[34].

As for smokeless tobacco, the group of experimenter is extremely low with only 5.2% of students mainly boys and 15-years old students. These results comply with the results of 2014 Bulgarian adult tobacco survey where only small number of respondents indicate smokeless tobacco use[35].

- The data from GYTS-2015 demonstrate an early ***smoking initiation*** with 15.4% of students, experimenting with tobacco before the age of 10 and, 8.3% of them - before the age of seven. The group of early experimenters comprise twofold more boys than girls. It has been outlined that gender differences in smoking initiation persists during all 3 stages GYTS and are consistent with data from the 2014 Bulgarian adult tobacco survey where about the same proportion of the respondents (17.7%) have initiate smoking at this age[36]. Early initiation of smoking established in the 3 stages of GYTS-Bulgaria, even if presenting a downward trends, is of particular concern because adolescents, who start smoking at a younger age, are more likely to become regular smokers as adults, smoke more cigarettes per day in adulthood, smoke for longer and are less likely to quit[37],[38]. On the other hand, the earlier age of smoking initiation implies an early originating exposure to the greater number of toxic and cancer-causing components of smoking. This is happening during an age period when growth and development are not complete and susceptibility to the detrimental effects of tobacco smoke is higher than in adulthood. For many of the smoking related chronic non-communicable diseases, the risks increase with the duration and cumulated amount of this behavior[39]. Thus, prevention of the onset of adolescent smoking is one of the essential components of the efforts to reduce overall prevalence of smoking and its consequences in terms of smoking related morbidity and mortality.
- From the 29.5% of ***current smokers*** of any tobacco the majority are current ***cigarette smokers*** (20.4%), which constitutes about the half of cigarette experimenters. The

[34] Barrington-Trimis JL, Urman R, Berhane K, Unger JB, Cruz TB, Pentz MA, Samet JM, Leventhal AM, McConnell R. E-Cigarettes and Future Cigarette Use. Pediatrics. 2016;138(1). pii: e20160379. doi: 10.1542/peds.2016-0379.
[35] Manolova A et al. Unpublished data
[36] Manolova A et al. Unpublished data
[37] Taylor J, Taylor A, Lewis S, McNeill A, Britton J, Jones L, Bauld L, Parrott S, Wu Q, Szatkowski L, Bains M. A qualitative evaluation of a novel intervention using insight into tobacco industry tactics to prevent the uptake of smoking in school-aged children. BMC Public Health 2016, 16 :539. DOI 10.1186/s12889-016-3205-8
[38] Bernard Fuemmeler, Chien-Ti Lee, Krista W. Ranby, Trenette Clark, F. Joseph McClernon, Chongming Yang, Scott H. Kollins. Individual- and community-level correlates of cigarette-smoking trajectories from age 13 to 32 in a U.S. population-based sample. Drug Alcohol Depend. 2013 September 1; 132(0): 301–308.. doi: 10.1016/j.drugalcdep.2013.02.021
[39] U.S. Department of Health and Human Services. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2012.

percentage of current cigarettes smokers decreases by 12.7%% for the 14-year period between 2002 and 2015 surveys.

When comparing our data with the 2011 survey results in other countries from WHO-Euro, more students currently smoke cigarettes in Croatia (27.2%), Latvia (31.5%) and Slovakia (23.5%), equal percentage in Turkey (20.4%) less in Ukraine (16.6%) and Cyprus (11.9%)[40].

Regardless of the marked gradual decrease in the number of girls, current smokers during the 14-year period between the surveys they are still slightly not significantly predominating over boys. In both genders, similar results are found in the group of 13-14-year-old students. At the age of 15, after entering the high school, a statistically significant increase in cigarette smoking prevalence indicator is observed.

Another aspect of this is the considerable stability in smoking level from adolescence to adulthood. Our results show that the GYTS 16 years old students[41]' smoking rate of 37.1% is almost equal to the 2014 adult 20+ smoking one (37.4%)[42]. Those data are consistent with the proved in other studies evidence that adolescent smoking is strong predictor of adult smoking and the habit, formed at this age will persist later in life[43].

Concerning the quantity of cigarettes smoked curve of the distribution, the groups located at both ends outline the key problems in student smoking. Those, mainly girls that smoked less than 1 or 1 cigarette per day, and can be estimated as social smokers are twice as many as of those smoke more than 20 cigarettes per day. For the latter group mainly boys it could be supposed that students are addicted to nicotine.

Generally the entire distribution is shifted in the direction of smaller number of cigarettes smoked allowing to suggest that the number of social smokers in the early stages of the establishment of the unhealthy habit is very high, almost half of current smokers. On the background of relatively small number of cigarettes smoked, regular (daily or almost every day) smokers are the about ½ of all who currently smoke cigarettes.

- The found ***susceptibility of non-smoking*** students to this behavior with over 1/5 of non-smokers reporting that they are inclined to start smoking in the next year (20.2%) is a quite serious problem for public health. It of great concern, because this group may be more open to social and media influences that encourage them to experiment with tobacco and become regular smokers[44,45]. The proportion of these students has very slightly increased in 2008

[40] http://nccd.cdc.gov/GTSSData/Ancillary/DataReports.aspx?CAID=1

[41] This age group is not discussed in the present report

[42] Unpublished data of the National study of NCD risk factors in Bulgarian adult population, 2014

[43] U.S. Department of Health and Human Services. Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2012.

[44] Gregoire B, Azagba S, Asbridge M. Smoke-free homes, smoking susceptibility and familial smoking among never-smoking high school students: a cross-sectional analysis. CMAJ Open. 2016 Jun 7;4(2):E298-303. doi: 10.9778/cmajo.20160010.

[45] El-Toukhy S, Choi K. Smoking-Related Beliefs and Susceptibility Among United States Youth Nonsmokers.

compared with 2002, and even the decrease with about ten percent in 2015. Data from other GYTS survey in WHO show that the number of students never smokers to initiate smoking is more than twofold greater in Ukraine (55.3%). Cyprus, Slovakia, Latvia and Croatia data are closer to ours, ranging from 19.1% and 25.5%[46].
Children and adolescents are the main segment of the population, to which the priorities of the National Program for the prevention of non-communicable diseases 2014-2020 are directed to with 10% reduction of smoking in Bulgarian population and 50% reduction of smoking initiation in children younger than 13 years.

The main reasons for focusing the preventive measures on this age group are based on the results of GYTS and those of numerous studies, providing evidence that if smoking does not start in childhood, the probability of later onset is low, and on data, showing that the chance of an adult smoker to quit is inversely related to the age of smoking initiation[47]. Therefore the prevention of the smoking initiation in adolescence should be one of the essential components of the efforts to reduce overall prevalence of smoking and its consequences in terms of smoking related morbidity and mortality.

- In the last decades, two **tobacco products** are introduced in our country and are of particular concern nowadays. Whereas shisha tobacco smoking is documented since at least the 1600s and used in Bulgaria during the Turk domination (1352-1878), the electronic cigarettes (e-cigarettes) have been patented in 2004 are on Bulgarian market since recently.

In many countries ***shisha tobacco smoking*** is a growing public health problem especially for youth. The 2015 GYTS, Bulgaria show that more than 1/10 of surveyed students are current shisha smokers (16.9%) with almost equal proportion of boys and girls. A significant increase of shisha smoking of about 10 points is established between the 13- and 15-years aged students (10.9% to 20.6% respectively). A stable trend in prevalence from adolescence to early adulthood – 23.2% at age 20-24 years and decrease thereafter is found[48]. Bulgarian data is consistent with those from other surveys demonstrating more common shisha smoking in adolescent and younger adults than in older ones. Data from 2011 Global Youth Tobacco Survey show that current shisha tobacco use is highest among students from Lebanon (37%), the West Bank (33%) and parts of Eastern Europe (Latvia 22.7%, the Czech Republic 22.1%, and Estonia 21.9%)[49]. These countries also recorded greater than 10% prevalence of dual shisha and cigarette use. Data from 23 countries in the WHO Eastern Mediterranean region using the Global Youth Tobacco Survey analysis demonstrate that dual users (cigarettes and shisha)

J Adolesc Health. 2015 Oct;57(4):448-50. doi: 10.1016/j.jadohealth.2015.06.016.
[46] http://nccd.cdc.gov/GTSSData/Ancillary/DataReports.aspx?CAID=1
[47] Benjamin RM. A new surgeon general's report: preventing tobacco use among adolescents and young adults. Public Health Rep Wash DC 1974. 2012 Aug; 127(4):360–361.
[48] Manolova A et al. nonpublished data
[49] Jawad M , Lee JT, Millett C. Shisha tobacco smoking prevalence and correlates in 25 Eastern Mediterranean and Eastern European countries: cross-sectional analysis of the Global Youth Tobacco Survey. Nicotine Tob Res. 2016 Apr;18(4):395-402. doi: 10.1093/ntr/ntv101.

smoke more cigarettes and more shisha sessions per month, than single users. Dual users achieve their nicotine level from at least two sources and may consequently be more nicotine-dependent than single users, thus resulting in more frequent and intense use of both products[50].

An evidence exist that shisha tobacco smoking is implicated in the pathogenesis of lung cancer, respiratory illness, low birth weight, periodontal disease, negatively affects lung function and may be as harmful as cigarette smoking[51]. In spite of these adverse health effects, a recent systematic review reveals that shisha smoking is believed to be a less harmul form of tobacco smoking, and a safer alternative to cigarette smoking[52].

Similar to other countries[53,54] shisha is imported in Bulgaria by immigrants of Arab origin as part of their culture and traditions, while not legally regulated by June of 2016. For the first time with the amendment of the Tobacco Control Act, the shisha is subjected to strict regulation in compliance with EU requirements. These texts have to be enforced at the same degree for cigarettes, particularly concerning youth. Smoke free laws and rising of taxes should also be rigorously enforced.

The ***electronic cigarette*** (e-cigarette) consists of an electric power supply (usually a battery), a metal heating element, and a liquid. This liquid contains humectants (typically propylene glycol and/or glycerin), flavorings, and nicotine, even if non-containing nicotine liquids are available[55]. It may also include some of the same toxicants as cigarette smoke, such as tobacco-specific nitrosamines and metals. Although e-cigarettes deliver many fewer toxic substances at much lower levels than conventional cigarettes, they contain nicotine, in doses designed to imitate cigarettes. Exposure to high amount of nicotine can be toxic as most e-cigarette users are current or former smokers, and dual use of regular tobacco cigarettes and e-cigarettes is common[56].

The GYTS, Bulgaria 2015 result show that e-cigarettes are very popular among adolescents, including those who have never smoked - 87.7% of all 13-15 year olds have ever heard of e-cigarettes.

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[50] Jawad M, Roderick P. Integrating the impact of cigarette and shisha tobacco use among adolescents in the Eastern Mediterranean Region: a cross-sectional, population-level model of toxicant exposure. Tob Control doi:10.1136/tobaccocontrol-2015-052777

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[52] Jawad M, Jawad S, Waziry RK, Ballout RA, Akla EA, Interventions for shisha tobacco smoking prevention and cessation: a systematic review. Sci Rep. 2016; 6: 25872. Published online 2016 May 11. doi: 10.1038/srep25872

[53] Maziak W, Ben Taleb Z, Raed Bahelah R, Islam F, Jaber R, Auf R, Salloum RG. The global epidemiology of shisha smoking. Tob Control 2015;24:i3–i12. doi:10.1136/tobaccocontrol-2014-051903

[54] Mukherjea A, Morgan PA, Snowden LR, Ling PM, Ivey SL. Social and cultural influences on tobacco-related health disparities among South Asians in the USA.Tob Control. 2012; 21(4):422-8.

[55] Brown C. J.; Cheng J. M. Electronic cigarettes: product characterisation and design considerations. Tob. Control. 2014, 23, ii4–ii10.

[56] Pepper JK, Eissenberg T. Shishas and Electronic Cigarettes: Increasing Prevalence and Expanding Science. Chem Res Toxicol. 2014. 18; 27(8): 1336–1343. doi: 10.1021/tx500200j

Three out of ten current smokers have tried e-cigarettes even if it was one or two puffs (31.0%). One third of experimenters currently smoke e-cigarettes (10.8%) with no gender, age and regional differences captured. Our results are consistent of those from other studies in USA and Europe. Among USA cigarette experimenters, ever e-cigarette use was associated with higher odds of ever and current cigarette smoking. Current e-cigarette use was positively associated with ever-smoking cigarettes and current cigarette smoking[57]

In EU a large adult study of adults and adolescents from 27 countries demonstrate that 20% of current cigarette smokers reported ever using e-cigarettes, compared to only 5% of former smokers and 1% of never smokers[58]. In line with the EU data, the Bulgarian GYTS 2015 results show that 3.8% of current cigarettes nonsmokers are e-cigarette users with male to female ratio of 5:1 and most common e-cigarette use among 14-year old nonsmokers (4.9%). The GYTS Bulgaria nonsmokers' e-cigarette use are of great concern because data exist that e-cigarette, use in never smokers at this age may increase risk of subsequent initiation of cigarettes and other combustible tobacco products during the transition to adulthood. Baseline e-cigarette use was independently associated with progression to smoking with adjusted odds ratio of 8.3 (95% CI, 1.2-58.6).

An USA study also demonstrate that adolescents and young adults who have never smoked conventional cigarettes but are current e-cigarettes user, may be at risk for subsequent progression to traditional cigarette smoking[59,60]. In the Southern California prospective Children's Health Study nonsmokers, e-cigarette users have 6.17 times (95% CI 3.30–11.6) risk of initiating cigarettes than nonsmokers never e-cigarette users[61] .

These results could be explained by the neurological and social specificity of early adolescence that may encourage risk-taking behavior, and neural plasticity that may sensitize the adolescent brain to the effects of nicotine, so that students who have smoked e-cigarettes at baseline are significantly more prone to initiate smoking cigarettes[62].

Because of limited evidence of effectiveness and safety, in many countries worldwide, e-cigarettes are not approved as medical tobacco cessation aid. In this sense, they are legally defined as tobacco products. In the amendment of the Tobacco Control Act, a new chapter for e-cigarettes is founded where all requirements on ingredients, registration, adding additives,

[57] Dutra LM, Glantz SA. E-cigarettes and conventional cigarette use among US adolescents: A cross-sectional study. JAMA Pediatr. 2014 Jul; 168(7): 610–617. doi: 10.1001/jamapediatrics.2013.5488

[58] Vardavas C. I., Filippidis F. T., and Agaku I. T. (2014) Determinants and prevalence of e-cigarette use throughout the European Union: a secondary analysis of 26 566 youth and adults from 27 Countries. Tob. Control. [Online early access], DOI: , Published Online: June 16.10.1136/tobaccocontrol-2013-051394

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[60] Leventhal AM, Strong DR, Kirkpatrick MG, Unger JB, Sussman S, Riggs NR, Stone MD, Khoddam R, Samet JM, Audrain-McGovern J. Association of Electronic Cigarette Use With Initiation of Combustible Tobacco Product Smoking in Early Adolescence. JAMA. 2015;314(7):700-707. doi:10.1001/jama.2015.8950.

[61] Barrington-Trimis JL, Urman R, Berhane K, Unger JB, Cruz BT, Pentz MA, Samet JM, Leventhal AM, McConnell R. E-Cigarettes and Future Cigarette Use. Pediatrics Jul 2016, 138 (1) e20160379; DOI: 10.1542/peds.2016-0379

[62] Benner AD. The transition to high school. Educ Psychol Rev. 2011;23(3):299-328.

flavors and sweeteners are banned. It is also prohibited e-cigarettes advertising in all including electronic media, sponsoring all kinds of activities and sale to minors under 18 years of age are included too.

4.1.2 SHS exposure

Article 8 of the WHO FCTC addresses the issue of "Protection from exposure to tobacco smoke". Second hand tobacco smoke (SHS) is one of the leading indoor air pollutants with contained therein more than 7 300 chemical substances with 67 of these substances have proven carcinogenic and mutagenic activity. Of further importance, especially in childhood are the substances with a strong irritative and toxic effect on ciliary epithelia of the airways[63,64].

Numerous studies have evidenced the broader spectrum of harmful health impacts, especially in childhood, when susceptibility to pollution exposure is greater[65]. It has been established that when children grow up in families of smokers, the risk of occurrence of pathology is two to four times higher as compared to that of adults[66]. A number of diseases affecting the adult population have their genesis in childhood, arising as consequences of individual's environment during this period (e.g. cardiovascular diseases, some lung diseases, osteoporosis and cancers). Thus, SHS exposure presents a serious health risk with long-term consequences, originated in childhood.

SHS exposure is prevalent in many countries despite growing awareness of its adverse health effects on nonsmokers. It is also referred to the Bulgarian children population during the last decade[67,68]. On this background in first two phases of the GYTS survey home/parental smoking exceeds the 70%, with statistically significant more parents-smokers in student-smokers' group than in the never-smokers' one. The GYTS 2015 *exposure to parental smoke at home* has significantly fallen and has been reported by about half of respondents (50.8%). These data agree with the results of the 2013 national SHS exposure and health risk in preschool aged children survey - 57.5% of 2 922 children aged 3-6 years are exposed to parental smoke more at home[69]. Close to our GYTS, 2015 data for home exposure are those established in 2011 GYTS in

[63] Rodgman A, Perfetti TA. The Chemical Components of Tobacco and Tobacco Smoke. Boca Raton (FL): CRC Press, Taylor & Francis Group, 2009.

[64] U.S. Department of Health and Human Services. How Tobacco Smoke Causes Disease - The Biology and Behavioral Basis for Smoking-Attributable Disease. A Report of the Surgeon General. Atlanta, Ga, U.S. Dept. of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. 2010.

[65] US Department of Health and Human Services. The Health Consequences of Involuntary Exposure to Tobacco Smoke: a Report of the Surgeon General. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health; 2006.

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[67] Manolova A, Vodenicharov E, Tzolova G, Dimitrov P, Tafradjiiska M. Passive smoking and lung function in childhood. Archives of the Balkan Medical Union. 2012. 47, 3: 239-242.

[68] Manolova A, Kostadinova K, Tzolova G, Dimitrov P, Avramov T, Tafradziyska M, Evstatieva K. Intervention measures to reduce the health risks for children from passive smoking. Practical Pediatrics. 2014, 7 (in Bulgarian).

[69] Manolova A, Tsolova G, Kostadinova K, Avramov T, Tafradjiiska M, Koteva A, Evstatieva K. Parental smoking, asthma and asthma-like

Slovakia (44.2%) and Latvia (44.6%). Higher level of parental smoking exposure are found in Cyprus and Croatia (81.4% and 66.9% respectively).

Our results are consistent with studies in children and adolescents in UK and Germany demonstrating that home exposition has decreased markedly, in some cases immediately after the introduction of laws to protect non-smokers. In Germany the study of Kuntz et al., is based on two waves of the "German Health Interview and Examination Survey for Children and Adolescents" - The results show that the percentage of 0- to 6-year-old children exposed to SHS in home fell from 23.9 % to 6.6 % from 2003-2006 to 2009-2012[70]. The results from Health Survey for England shows that in children aged 4-15 years SHS, validated by cotinine level, has declined by 79% since 1998 to 12.7% in 2012[71] .

Identical proportion and trends as for home exposure are found in relation to reported SHS exposure in *indoor public places* - 75.7% in 2002, 70.1% in 2008 and then at the background of the 2012 total ban on smoking in enclosed public places a decrease to 50.6% in 2015 is established. With reference to educational institutions, however, we have found conflicting results. Even with generally known harmful effects of the SHS (61.8%) and stated support to total ban of smoking in public places (76.2%) 1 out of 10 adolescents, current smokers usually smoke at school (11.2%). In addition 80.5% of students have seen anyone smoking inside the school building or outside on school property.

SHS exposure have to be very seriously considered because in addition to negative health consequences of passive smoking on children and adolescents health, parental/school staff/other adults' tobacco use, i.e. the presence of negative role models within the home[72,73] and school environment[74],[75] are important factors that influences student's smoking behavior. Along this, evidence exists for a link between students' smoking with their perceptions of others' smoking and the presence of smoking individuals on school grounds.

The total ban of smoking in enclosed public places is introduced with an Amendment of Health Act from 2012 and the consequent Ordinance on the conditions and terms in which tobacco smoking is absolutely banned, not only inside the school building, but also in the schoolyard and on the sidewalks and entrances of school.

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symptoms in preschool children from Bulgaria. ERJ, 2014. 44, 58 P1130

[70] Kuntz B, Lampert T. Social disparities in parental smoking and young children's exposure to secondhand smoke at home: a time-trend analysis of repeated cross-sectional data from the German KiGGS study between 2003-2006 and 2009-2012. BMC Public Health. 2016;16:485. doi: 10.1186/s12889-016-3175-x.

[71] Jarvis MJ, Feyerabend C. Recent trends in children's exposure to second-hand smoke in England: cotinine evidence from the Health Survey for England. Addiction. 2015 Sep;110(9):1484-92. doi: 10.1111/add.12962.

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As could be seen form the GYTS, 2015 results the violation of the ban is widespread throughout the county and especially in educational institutions. Comprehensive measures that definitely affect implementation and enforcement the law and smoke-free policies are essential, as a smoke-free school environment have proven positive effect on improvement the general health of adolescents and may reduce students smoking and exposure to SHS[76].

As it has been outlined in MPOWER report "Good planning, adequate resources, and strong political commitment, effective use of mass media, meticulous legal drafting and participation by civil society" are essential for the prevention of tobacco use. When implementing legislation on smoke-free places, it is critical that governments generate broad public support through public education campaigns. Once enacted, laws establishing smoke-free places have to be well enforced in order to demonstrate the government's commitment to ensuring compliance[77].

4.1.3 Cessation

Article 14 of FCTC is directed on effective measures to promote cessation of tobacco use and adequate treatment for nicotinic dependence.

As affirmed in a US Surgeon General report on Preventing Tobacco Use Among Youth and Young Adults: "The tobacco epidemic continues because youth and young adults begin to use – and become addicted to – cigarettes and smokeless tobacco products"[78]

The results of GYTS, Bulgaria, point on the fact of relatively low age of first contact with cigarettes. Because of the addictive nature of nicotine, alkaloid occurring naturally in the tobacco, adolescents who begin smoking regularly at a younger age are more likely to develop tobacco dependency in adulthood or earlier. A Canadian study establishes that the most susceptible youths lose autonomy over tobacco within a day or two of first inhaling from a cigarette. Approximately 20% of adolescents reported symptoms within 1 month of initiating monthly smoking[79]. Rose et al. found that several symptoms are documented in a smoking as little as 1–3 days per month, with the most prevalent symptoms being "irritability after not smoking for a while," "increase in the amount smoked," and "needing to smoke more to feel satisfied"[80]. Specifically, the shortening of the latency-to-withdrawal that accompanies each

[76] Wakefield MA, Chaloupka FJ, Kaufman NJ, Orleans CT, Barker DC, Rual EE. Effect of restrictions on smoking at home, at school, and in public places on teenage smoking: cross sectional study. BMJ (Clinical Research Ed.) 2000;321:333–337. doi: 10.1136/bmj.321.7257.333.
[77] World Health Organization. WHO report on the global tobacco epidemic, 2008: the MPOWER package. Geneva, World Health Organization, 2008. Available at: http://www.who.int/tobacco/mpower/mpower_report_full_2008.pdf.
[78] US Surgeon General's Report: Preventing Tobacco Use Among Youth and Young Adults. 2012 Available at: http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/
[79] Austin SB, SL Gortmaker. Dieting and smoking initiation in early adolescent girls and boys: a prospective study. Am J Publ health. 2001, 91: 446-450.
[80] Rose JS, Dierker LC. An item response theory analysis of nicotine dependence symptoms in recent onset adolescent smokers. Drug and Alcohol Dependence. 2010;110:70–79. doi:10.1016/j.drugalcdep.2010.02.006.

additional cigarette may explain the need for increased amounts of smoking, in that youth find themselves having to smoke more in order to relieve or prevent withdrawal symptoms[81].

Other indicators of tobacco dependence are the unsuccessful attempts to quit smoking, reported in 2015 by more than six out of ten the smokers (61.9%). It has been evidenced that after reaching the brain, nicotine binds to nicotinic receptors. It is proven that activated receptors then stimulate the release of dopamine, a neurotransmitter associated with addiction. As adolescents' brains are still in stage of development they are highly susceptible to nicotine addiction, and the duration of smoking and number of cigarettes required to establish nicotine addiction are lower in adolescents than in adults[82]. Failed attempts at cessation can precede daily smoking and ICD-10–defined dependence typically appears before consumption reaches 2 cigarettes per day[83,84].

Review of the smoking cessation interventions among adults indicate that screening for tobacco use, offering counselling, and pharmacotherapy are effective means for tobacco cessation. A school-based smoking cessation curriculum for adolescents may be an effective means to reduce youth cigarette use and dependence[85]. The provided information should be focused not only on the long-term health consequences, not relevant for children from this age group, additionally health professionals should be able to give the knowledge, skills and tools to address the problem of early nicotine addiction as well. To great regret these initiatives have no impact on students smoking cessation and do not reach the adolescent population as only few students, ever smokers (12.0%) state that they have received help or advice to stop smoking from a program or health professional. Cessation programs must be multifaceted, delivered via multiple channels and targeted to all population groups, especially young people[86]

In 2005 in the frames of the 28 Regional Health Inspectorate (RHI) have been opened Tobacco Cessation Services. Health professionals from RHI departments "Disease prevention and Health Promotion", trained in the NCPHA have been approved as partners and methodological leaders for the teachers in schools and kindergartens in activities for prevention of the onset of smoking and the dissemination of information for the harm of smoking. During the period 2013-2015 the NCPHA have been organized training courses for general practitioners, health

[81] DiFranza JR, Wellman RJ, Mermelstein R, Pbert L, Klein JD, Sargent JD, et al. The natural history and diagnosis of nicotine addiction. Current Reviews in Pediatrics. 2011;7:88–96. doi:10.2174/157339611795735648.
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[83] DiFranza JR, Savageau JA, Fletcher K, O'Loughlin J, Pbert L, Ockene JK, McNeill AD, Jennifer Hazelton J, Friedman K, Dussault G, Wood C, Wellman RJ. Symptoms of Tobacco Dependence After Brief Intermittent Use. The Development and Assessment of Nicotine Dependence in Youth–2 Study. Arch Pediatr Adolesc Med. 2007;161(7):704-710
[84] Andreeva VA, Kobayakawa Sakuma KL. Adapting Smoking Cessation Programming to the Bulgarian Context. Evaluation & the Health Professions, 2008. 31, 3: 290-296 DOI: 10.1177/0163278708320149
[85] Wellman RJ, Sugarman DB, PhD; DiFranza JR, Winickoff JP. The Extent to Which Tobacco Marketing and Tobacco Use in Films Contribute to Children's Use of Tobacco. A Meta-analysis. Arch Pediatr Adolesc Med. 2006;160:1285-1296
[86] Centers for Disease Control and Prevention. Preventing tobacco use among youth and young adults: A report of the Surgeon General. Atlanta, GA: 2012.

professionals and experts from the RHI for raising their skills and knowledge in counseling the population in smoking cessation. A new Guidebook for prevention and restriction of tobacco use targeted at primary health care professionals has been prepared and printed[87], and a video film especially directed to youth in helping the personnel in the smoking cessation units released and disseminated.

4.1.4 Access and availability

Article 16 of FCTC is dedicated to recommendations about sales to and by minors, which are defined according to Bulgaria's standard practice as persons younger than 18 years. It also calls for a stop to distributing promotional products to minors.

Availability and the facility to get cigarettes along with the parental and peer model are the environmental factors that have an impact on adolescent smoking patterns. There are two general manners youth getting cigarettes in our survey— through commercial sources (such as store, shop, or kiosk), and through students' social network ("someone else" e.g. peers, family members, or other adults).

The GYTS 2015 data show that the main way to obtain cigarettes for more than a half of Bulgarian students is *from shops/kiosks* (53.5%), thus purchasing units' ratio is in reasonable correlation with cigarettes smoked per day distribution curve. With regard to facility of buying cigarettes a very low refusal rates are found (31.5%). The larger percentage of current smokers reporting not been refused purchase because of their age with steady rise of these figures with about eight points between 2002 and 2008 (from 61.9% through 68.6 %) and plateau thereafter – 68.5 % in 2015. Data are in agreement with the large body of research indicating that even young children have little difficulty to buy cigarettes[88], despite the existence of national regulations banning the sale of cigarettes to minors. As prevailing worldwide and about all European countries, Bulgaria have set the legal age of sale at 18.

Given the background, that all current smokers, boys and girls are well informed about the prices of cigarettes they mainly smoke, knowing the price range could be interpreted as dependent not only of their own purchasing experience, but also of life standard and income group students from survey belongs to.

One quart of the studied population (25.5%) uses another source of cigarette supply - from "someone else". As it has been demonstrated in other studies, children who rely solely on

[87] Manolova A. Dimitrov P. Guidebook of good practices for risk assessment and control in smokers for medical professionals. Ministry of Health. S., 2013, pp. 60. (in Bulgarian)

[88] Altman DG, Feighery EC Future directions for youth empowerment: commentary on application of youth empowerment theory to tobacco control. Health Educ Behav. 2004 Oct;31(5):641-7

social sources, tend to smoke less than those who use commercial sources to get their cigarettes[89].

In GYTS, 2015 survey, another third source is emerging – *street vendors* with 16.7% of students using it. It could be denoted that "street vendors" in Bulgaria is always related to unbranded 'black market' tobacco products trade. According to a study of "Center for the Study of Democracy", the market share of cigarettes illicit trading in Bulgaria increased to 20% from 2014 to 2015, translating into about half a billion levs (1/4 billion EUR) in lost government revenue from taxes and excise duty. Criminally sold cigarettes are mostly produced in Bulgaria but illegitimate imports are on the rise with smuggling of raw tobacco posting the sharpest increase from 2014. The survey results demonstrate that sustainable growth of the illicit cigarette market in Bulgaria has reached 20-25 per cent of the total consumption of tobacco products since the spring of 2014[90].

Tobacco smuggling constitutes a serious public health risk by undermining initiatives aimed at reducing tobacco consumption. Smuggled tobacco is most likely to be sold in deprived areas and increasingly children are being targeted[91,92]. Some authors have shown that combining community mobilization with enforcement of access laws, retailer education, and school based education, or stronger local laws may reduce the prevalence of youth smoking[93].

The importance of cigarettes accessibility is shown in the results of a number of studies on the effects of rising the legal age for purchasing. Raising the tobacco-buying age to 21 has gained support as a promising strategy to reduce youth cigarette access in USA. For example, Kessel and al. have established that raising the minimum tobacco sales age to 21 in the Boston suburb of Needham led not only reduce the possibility of legally buying cigarettes by students, but also to a nearly 50% decline in youth smoking, a much greater decline than is found in surrounding communities[94]. International experience indicates that age restrictions are difficult to implement and are not effective unless they are supplemented by enforcement of very strict regulations, creating rationale that underpins them; lobby the community and suitable agencies to enforce the standards and prosecute offenders of the law[95,96].

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[89] Woosruff SI, Candelaria JI, Laniado-Laborin R, Sallis J, Villasenor A. Availability of cigarettes as a risk factor for trial smoking in adolescents. Am J Health Behav. 2003; 27: 84-88.

[90] Center for the Study of Democracy. Financing of organised crime. 2015 Report. Levi M, Shentov O, Todorov B Eds. S, ISBN: 978-954-477-234-5pp 465. Available at: http://www.csd.bg/artShow.php?id=17317

[91] Nagelhout GE, van den Putte B, Allwright S, Mons U, McNeill A, Guignard R, Beck F, Siahpush M, Joossens L, Fong GT, de Vries H, Willemsen MC. Socioeconomic and country variations in cross-border cigarette purchasing as tobacco tax avoidance strategy. Findings from the ITC Europe Surveys. Tob Control. 2014 Mar; 23(0 1): i30–i38. doi: 10.1136/tobaccocontrol-2012-050838

[92] Adams ML, Jason, Pokorny S, Hunt Y. Exploration of the Link between Tobacco Retailers in School Neighborhoods and Student Smoking. J Sch Health. 2013; 83(2): 112–118. doi: 10.1111/josh.12006

[93] Feighery EC Future directions for youth empowerment: commentary on application of youth empowerment theory to tobacco control. Health Educ Behav. 2004 Oct;31(5):641-7

[94] Kessel S, Schneider SK, Buka SL, Dash K, Winickoff JP, O'Donnell L. Community reductions in youth smoking after raising the minimum tobacco sales age to 21. Tob Control 2015; 0:1–5. doi:10.1136/tobaccocontrol-2014-052207

[95] Biglan A, Ary DV, Smolkowski K, et al. A randomized controlled trial of a community intervention to prevent adolescent tobacco use. Tobacco Control 2000; 9: 24–32

4.1.5 Exposure to Anti-Tobacco Information

Articles 11 and 12 of the World Health Organization's Framework Convention on Tobacco Control establish standards for two important forms of communication: packaging regulations (Article 11), and mass media campaigns (Article 12).

In a systematic review, Golechha reports that mass media campaigns are widely used to expose the population to messages through television, radio, and newspapers[97]. Such campaigns can produce positive or negative changes in health-related behavior in populations. It has been suggested that the mass media is particularly appropriate for delivering antismoking messages to young people because they are more exposed to the media.

In this context, GYTS, 2015 data show that the half of students (50.0%) have noticed anti-tobacco messages in the media during the past 30 days and about 1/3 of them at sporting or community events (34.9%). These figures are with about 30 percentage points less than in previous 2008 survey when 87.5% of students noticed them. As it has been mentioned before, one of the main reasons of this alarming trend is lack of appropriate funding of tobacco use preventive activities. Similar trend but with lower amplitude is found in GYTS 2015 students' answers the item concerning discussions about the dangers of tobacco use held in school. In this line, the importance of combined intervention (mass media and school-based) for reduction in smoking outcomes in young people <25 years is outlined in the youth smoking behavior interventional review of Brinn et al.[98]. In other longitudinal survey, Biglan et al have evaluated the impact of tobacco use in young people. An integration of school based programs (displaying videos about effects of smoking on health, resistance against social pressure, peer discussion), media programs (knowledge provision, advertising around sport fields, radio announcements) and community programs (anti-tobacco activities for youth, family relationships' enhancement, voluntary activities, and limiting youth access to tobacco) is implemented. The results demonstrate a significant positive effect on prevalence of weekly cigarette use, significantly lower smoking prevalence rate after 1 year and significantly, more negative attitude toward tobacco and intention to its use during 5 years is reported in the communities using integrated tobacco use preventive approach[99].

Bulgarian situation when lacking financial support for smoking prevention and health promotion, the introduction of Internet based interventions or mobile phone application will have the capacity to provide useful and accessible evidenced-based smoking prevention and

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[96] Brener ND, Kann L, McMannus T, Kinchen SA, Sundberg EC, Ross JG. Reliability of the 1999 Youth Risk Behaviors Survey Questionnaire. J Adolesc Health 2002; 31:336-42.

[97] Golechha M. Health Promotion Methods for Smoking Prevention and Cessation: A Comprehensive Review of Effectiveness and the Way Forward. Int J Prev Med. 2016 Jan 11;7:7. doi: 10.4103/2008-7802.173797.

[98] Brinn MP, Carson KV, Esterman AJ, Chang AB, Smith BJ. Mass media interventions for preventing smoking in young people. Cochrane Database Syst Rev. 2010;11:CD001006.

[99] Biglan A, Ary DV, Smolkowski K, Duncan T, Black C. A randomised controlled trial of a community intervention to prevent adolescent tobacco consumption. Tob Control. 2000;9:24–32. doi: 10.1136/tc.9.1.24.

cessation resources that can be accessed by a large number of young people. They are cheap to deliver and, probably, will be accepted well by students.

On the other hand, despite the existence of comprehensive evidence on tobacco and health, a significant public informational gap exists in Bulgarian mass media on newly emerging tobacco products, specifically concerning shisha and electronic cigarettes, smoked by 16.9% and 10.8% of students.

4.1.6 Awareness and Receptivity to Tobacco Marketing

Article 13 of the FCTC prohibits advertising and promotional products for tobacco (10). At a minimum, it states that false and misleading impressions are banned, direct and indirect incentives are banned, and tobacco advertising, promotion, and sponsorship on media channels (including the Internet) should be reduced.

Bulgarian Law for Tobacco and Tobacco Products and the Law for Radio and television prohibit direct advertising of cigarettes in all public places with the exception of places of production and trade. The latest version of Tobacco and Tobacco Products Act includes new prohibitions texts relating to the media, sponsorship and the Internet, but are also cases where advertising is allowed in places and events, the audience of which the does not include persons under 18 years.

Even if ban on advertising of tobacco products is enforced, billboards that a large number of young people see continue nowadays, even to a lesser extent, to display tobacco advertising.

Further, due to lack of legal prohibition tobacco companies have increasingly shifted their efforts from traditional advertising to promotional activities. Thus, this kind of indirect marketing, such as putting a cigarette brand name on a different product still exists and demonstrate a rising phenomenon. In 2015, about ¼ of the students state being owners of an object with cigarette brand logo on it - 25.6% versus 16.4% in 2008 and 21.0% in 2002. Cigarette promotion appears to be an important factor with respect to the receptivity and reinforcement among current smokers about tobacco consumption.

Our 2015 data also show that 14.6% of students nonsmokers are own also such an items (more boys than girls do, respectively 16.8% and 11.8%. The results of the prospective study of Biener and Siegel reveal that adolescent nonsmokers and early experimenters who owned a tobacco promotional item and named a brand whose advertisements attracted their attention at baseline were more than twice as likely to have become established smokers 4 years later as compared with those not involved with tobacco promotions[100]. Promotions foster positive attitudes, beliefs, and expectations regarding tobacco use and in this manner, intentions to use thus increasing the likelihood of initiation. Greater exposure to promotion leads to higher

[100] Biener L, Siegel M. Tobacco marketing and adolescent smoking: more support for a causal inference. Am J Public Health. 2000;90:407–411

smoking risk, established in diverse cultures, persisting when other risk factors, such as socioeconomic status or parental and peer smoking, are controlled[101,102].

Available evidence suggests a causal relationship between tobacco promotional activities and the risk for smoking initiation and regular tobacco use in adolescence[103]. These findings provide strong support that banning of cigarette promotional campaigns could reduce adolescent smoking.

On the other hand, favorable portrayals of smoking in the media, especially the depiction of tobacco use in films have been cited as potential motivators of the initiation of smoking among adolescents[104]. The prevalence of GYTS students that have affirmed having seen movie actors smoking on TV or video broadcasts is quite high in 2002 (93.7%), and regardless of significant decrease, they have remained so in 2008 (87.2%) and 2015 (83.6%). In this way, a British cohort study demonstrates a strong, direct, independent dose-response association between seeing tobacco used in films and trying cigarettes[105], a conclusion which supports the hypothesis that the appearance of smoking and tobacco-related messages in media plays a role in the initiation of smoking among adolescents as well as the progression to established smoking in long-term follow-up. In such a way RJ Wellman et al. have quantified the risk of exposure on initiation of tobacco use among adolescents. The authors demonstrate that the odds of becoming smoker are more than doubled by exposure to marketing and media. This relationship is strong, with similar effects observed across time in different countries, in cross-sectional and prospective designs using a variety of measures of exposure, and whether the outcome is initiation or tobacco use status[106] (24).

In this context, it is important to consider public health implications as exposure to smoking depictions and as follows, educational programs may be expanded in content to address the effect of advertising. Adolescent must be educated to become critical viewer of media in all its forms, including indirect advertising in movies, TV shows and Internet.

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[101] DiFranza JR, Wellman RJ, Sargent JD, Weitzman M, Hipple BJ, Winickoff JP. Tobacco Promotion and the Initiation of Tobacco Use: Assessing the Evidence for Causality. Pediatrics. 2006, 117, 6: e1237-e1248 (doi:10.1542/peds.2005-1817)

[102] Hanewinkel R, Isensee B, Sargent JD, Morgenstern M. Cigarette advertising and adolescent smoking. Am J Prev Med. 2010 Apr;38(4):359-66. doi: 10.1016/j.amepre.2009.12.036.

[103] Lovato C, Watts A, Stead LF. Impact of tobacco advertising and promotion on increasing adolescent smoking behaviours. Cochrane Database Syst Rev. 2011 Oct 5;(10):CD003439. doi: 10.1002/14651858.CD003439.pub2.

[104] Waylen AE, Leary SD, Ness AR, Tanski SE, Sargent JD. Cross-sectional association between smoking depictions in films and adolescent tobacco use nested in a British cohort study. Thorax. 2011 Oct;66(10):856-61. doi: 10.1136/thoraxjnl-2011-200053.

[105] Waylen AE, Leary SD, Ness AR, Tanski SE, Sargent JD. Cross-sectional association between smoking depictions in films and adolescent tobacco use nested in a British cohort study. Thorax. 2011 Oct;66(10):856-61. doi: 10.1136/thoraxjnl-2011-200053.

[106] Wellman RJ, Sugarman DB, PhD; DiFranza JR, Winickoff JP. The Extent to Which Tobacco Marketing and Tobacco Use in Films Contribute to Children's Use of Tobacco. A Meta-analysis. Arch Pediatr Adolesc Med. 2006;160:1285-1296

4.1.7 Knowledge and Attitudes

Article 12 of the FCTCE is related to education, communication, training and public awareness about negative health effects of tobacco use (10). The school setting, designed for supposed three processes, may have an important influence on smoking patterns and school professionals may play a key role in efforts to control youth tobacco use.

Nearly the half of students (57.1%) reported in 2015, are being informed and definitely thinking that tobacco smoke is harmful for their health. Their number has fallen with about ten points when comparing 2015 data with previous GYTS surveys in 2002 and 2008 (62.2% and 68.1% respectively). In 2015 GYTS survey about the same percentage believe that other tobacco smoking is harmful to them and nearly one quarter of respondents - that it is difficult to quit once someone starts using tobacco. Existing lack of knowledge of smoking health risks is alarming and serves as one of important predictors of adolescent smoking. This also may indicate the need for changes in the content of the health education curriculum in school as well as new teaching methods. The students should understand, discover in themselves and get skilled in overcoming psychological mechanisms and the social context, related to the onset of smoking during adolescence, as well as influence of peers on adolescent tobacco use. With the changes of the Health Law in 2007, medical services in kindergartens, schools and specialized institutions are under the obligation to provide health promotion and disease prevention in childhood, implementing special health education programs for tobacco use prevention. On the other hand, the Ministry of Education has elaborated standards and methodological guidelines for school health education on the problems of youth smoking, but they are not implemented in school policy and practice.

Preceding and systematic need assessment, new participation, interactive and "peer to peer" teaching methods, establishment of supportive environment and getting and using effective feedback should change the extend of impact on adolescent smoking of anti-tobacco school based programs.

Other factors, that might influence adolescents smoking, include restrictions on smoking, taxation, and costs. Ever if studies of the effects of smoke-free air laws on reducing smoking initiation and transition to regular smoking are very limited and mainly cross-sectional, they provide important evidence on the effectiveness of these laws in preventing smoking initiation and progression to current smoking[107,108]. This is well documented in our study as significant downward trend found in smoking experimentation and current smoking between the three GYTS surveys. In the years, when the first study was conducted, there was no prohibition of smoking. In 2008 acted only partial smoking ban and in 2012 a total ban on smoking in all

[107] IARC Handbooks of Cancer Prevention, Tobacco Control, Vol. 13: Evaluating the Effectiveness of Smoke-Free Policies. Available online: http://www.iarc.fr/en/publications/pdfs-online/prev/handbook13/handbook13.pdf. accessed on 25 Sept. 2016

[108] Hyland A., Barnoya J., Corral J.E. Smoke-free air policies: Past, present and future. Tob. Control. 2012; 21:154–161. doi: 10.1136/tobaccocontrol-2011-050389.

enclosed public places was introduced. On the other hand, smoke-free laws and policies reduce the visibility of smoking to youth, which reflects as a decrease in social acceptability of smoking[109], thus further shift social norms, rise policy acceptance and support even in smoking youth. In this context during the first two stages of GYTS, Bulgaria, nearly ¾ of students support the ban on smoking in enclosed public places. In 2015 this support rises with about 13 percentage points and 76.2% of students are in favor of total smoking ban in all enclosed public places with 55,5% supporting smoking to be banned at outdoor public places too.

4.2 Relevance to FCTC

The results of GYTS are critical for assessing progress toward WHO FCTC and MPOWER successful implementation. They provide comprehensive information on the basic indicators, related to various provisions of the WHO FTCT and the MPOWER measures, thus helping to evaluate the effectiveness of the policies on tobacco control to protect young people from tobacco smoke.

- Bulgaria's participation in GYTS, 2015 addresses the first element of MPOWER regarding youth MONITORING tobacco use. In addition, the GYTS findings are directed towards several other provisions of the FCTC, targeting the role of health professionals, school personnel and the comprehensive school tobacco control policy. The findings that meet other MPOWER measures are as follows:

- PROTECT PEOPLE FROM TOBACCO SMOKE. There is a significant downward trend in students' SHS exposure since the first stage of GYTS, Bulgaria has been performed in 2002 and 2008, though the number of exposed students is still inadmissibly high. Our data reveal that in 2015 about half of students (50.6%) reported exposure to second hand smoke in multiple venues. In spite of the fact that behavior regarding SHS exposure has been changing, it is still very slow process. More than seven out of ten students are in favor of total smoking ban at all indoor public places (76.2%), similar to the percentage of adult population in 2014 National Survey of NCD Risk Factors.

- OFFER HELP TO QUIT TOBACCO USE. Only a small group of current smokers (12.0%) received any professional help or advice to stop smoking, ever if 48.1% express a desire to quit smoking, and 61.9 % tried to do quit in the past 12 months. Girls-current smokers more often reported that they would like to stop smoking than boys (59.1%% vs. 45.5%), and they more often attempted to stop than boys do (66.1% vs. 56.3%). The GP, pediatricians and school health staff, responsible for the health surveillance of children should be much more aware of smoking prevalence in children and should be additionally trained to ask them at each appointment about smoking and help them in an appropriate way, as to achieve best

[109] Alesci NL, Forster JL, Blaine T. Smoking visibility, perceived acceptability, and frequency in various locations among youth and adults. Prev Med. 2003 Mar; 36(3):272-81

results in quitting. Introduction of computer or internet based interventions or mobile phone application provide granted access to large percentage of young people. They are cheap to deliver and, probably, well accepted by youth.

- WARN ABOUT THE DANGERS OF TOBACCO. During the past year 53.1% of students had been taught in class about the dangers of tobacco use. This is about 10 point less than recorded in the previous GYTS surveys in 2002 and 2008. At our opinion, more class discussions have to deal with the health hazards of smoking, the reasons of tobacco use in childhood and smoking cessation. The healthy life style promotion should starts very early in the life. There is also a need for more evidence based media campaigns including Internet to continue to warn population of all health hazards from tobacco use. High percentage of current smokers noticed text health warning on cigarette packages (88.3%). As only textual health warnings are proven not sufficient, pictorial health warnings are currently being introduced. This is in accordance with the new EU Directive on Tobacco Products that proposed pictorial health warning on at least 65% of the both sides of tobacco products. The Law on Tobacco and tobacco products is updated in 2016 to meet this requirement.

- ENFORCE BANS OF ON TOBACCO ADVERTISING AND PROMOTION - The GYTS, 2015 data show that the half of students (50.0%) have noticed anti-tobacco messages in the media during the past 30 days and about 1/3 of them do the same at sporting or community events (34.9%). These figures are with about 30 percentage points less than in previous 2008 survey when more than eight out of ten students noticed such messages. As it has been mentioned before, the reason is lack of appropriate funding of anti-tobacco preventive activities. More than 2/3 of students who visited cigarette point of sale have observed tobacco advertisement (63.2%). Much higher percentage of youth who watched television, video or movies in the past 30 days (83.6%) noticed anyone using tobacco product. Since tobacco advertising in the point of sales is not banned according to the Tobacco and Tobacco Products Act, the TV and movies, portraying smoking, is currently the most frequent way of tobacco marketing. Small number of students reported that they are offered free tobacco products from a tobacco company representative (10.8%), although it is also a popular way of indirect tobacco advertising. The direct and indirect tobacco advertising, promotion and relatively high level of receptivity to tobacco marketing among nonsmokers (34.8%) directly undermine all public health efforts to make smoking socially unacceptable behavior.

- RAISE TAXES ON TOBACCO PRODUCTS. The Bulgarian government assumes gradual increase of the excise rate on cigarettes. Specific excise duty will rise from 165 BGN per 1,000 pieces in 2016 to 177 BGN per 1000 cigarettes in 2018 and the proportional excise duty - from 25% in 2016 to 28% in 2018. This will result in rising retail-selling prices of cigarettes. In 2015, the average price of the most sold brand is 2.20 EUR. More than a half of all students are well informed and respond that the average price is between 2 and 4 EUR. However, students -

current smokers are not prevented of regular buying cigarettes at that price. The 2016 and future tax increasing, envisaged by government, might discourage all but the most price-insensitive adolescents from experimenting with tobacco or becoming regular smokers. It is also possible that a shift toward expanding the use of social sources and smuggled tobacco products could facilitate students to bypass cigarette tax and price rises.

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 used as arguments for adoption and implementation of effective measures for preventing and reducing tobacco consumption, nicotine addiction, and exposure to tobacco smoke.

4.3 Relevance to country

- **Early smoking initiation** is still a problem - 21.2% of all students ever smoked try their first cigarette before the age of 10, (boys to girl's ratio of 2). Even earlier, before age of seven, have their smoking initiation 12.1% of boys and 4.9% of girls.

- Some part of stable significant downward trend in cigarette smoking experimentation level between GYTS surveys - from 65.7% in 2002 to 58.8% in 2008 and 48.9% in 2015, could possibly be explained by shift in tobacco product preferences of experimenting students

- Very soon after their initiation Bulgarian adolescents are faced with the double burden of cigarette use and the use of **newly emerging tobacco products** such as shisha and electronic cigarettes. 36.2 % of the students have ever smoked shisha. About the half of experimenters currently smoke shisha (16.9 % of all current tobacco users). And 10.8% of current tobacco users currently used electronic cigarettes. The rate of addiction is close to those of cigarettes. Despite the existence of information on tobacco and health, a significant **public informational gap** exists on newly emerging tobacco products, specifically around shisha and electronical tobacco cigarettes.

- Half of GYTS survey population, studied in Bulgaria (50.6%) report **exposure to second hand smoke** in multiple venues. Given that there is no safe level of exposure to second hand smoke; policies that will protect youth from possible exposure are needed to be enforced more consistently. Over than 5 in 10 students report being exposed to ETS at any outdoor public places during the seven days preceding the survey in 2015.

- Percentage of youth who saw **anyone smoking inside the school building or outside on school property** in the past 30 days is incredibly high (81.8%), considering there is legislation, prohibiting tobacco sales in school's perimeter and to minors, and tobacco smoking ban on school premises – as public enclosed place and as a part of school code. It seems that regulation alone could not be enough for successful tobacco prevention and control.

- 70.1% of current cigarette smokers (73.3% boys and 67.9% girls) obtained cigarettes by buying them from a store, shop, or street vendor, 68.5% of them are not prevented from purchasing because of their age. Regardless of the existence of **comprehensive tobacco control legislation**, a significant **gap in** its adequate enforcement exists, specifically on newly emerging products like shisha and electronical tobacco cigarettes.

- Six out of ten students (63.2%) have noticed **tobacco advertisements or promotions** at points of sale. Almost ¾ of students (74.1%) report having noticed anyone using tobacco on television, videos. Students in Bulgaria are still reporting being exposed to pro-smoking even not traditional campaigns. At every stage of survey increasing number of students (7.2% in 2002, 10.2 % in 2008 and 10.8% in 2015) has been offered a free cigarette by a tobacco representative.

- More than the half of the students (53.1%), have passed through some form of **education in school about the dangers of tobacco use** in 2015. Significant downward shift of 15.6 points (from 68.7 % in 2008 to 53.1% in 2015) in the **integration of these topics in school curriculum** is registered. At the same time anti-smoking messages in media are noticed by a half of students (54.3%), which is significantly less than in two previous stages (94.8% and 92.1%, respectively).

- About 29.9% of students think **smoking tobacco help people feel more comfortable** at celebrations, parties, and social gatherings, with almost 10 points higher percent of boys than girls (34.4 % vs 24.9 %), and almost equal number of never smokers share that opinion (26.6 %).

- Lack of need assessment, student involvement and activity, teachers and health professionals' communication and consulting skills, systematic health and emotional education make **tobacco control in schools** difficult, but not impossible. Adequate and early tobacco control and health education is still crucial for effective and low-cost prevention.

5. RECOMMENDATIONS

The obtained results prove that, in spite of the changes in the public policy, directed to tobacco control in Bulgaria, children smoking continue to be a major priority issue for public health.

- The findings of GYTS Bulgaria 2015 outline the imperative need of development and implementation of qualitatively new approaches and preventive programs yet in the earlier school age, to prevent the "initial" use of cigarettes or to postpone maximally the start of smoking and to provide support for smokers willing to quit smoking.
- Focus the tobacco control efforts on implementation and enforcement of policies already in place, as well as additional efforts in development of new tobacco control programs. Those programs need to be comprehensive, broad-based, gender-specific and oriented to different age groups.
- Anti-smoking interventions for adolescents should be used in concert with other, accepted as effective, tobacco control methods (cigarette and tobacco product pricing, regulatory approaches, enforced smoking bans, compulsory health education). Encouraging young smokers to quit in addition to preventing the great majority of high susceptible non-smokers from starting may be an important first step.
- Introduce effective family-based interventions, aimed to teach parents to maintain smoke-free households, to set early on non-smoking expectations, and to build up skills to overcome peer influence and pressure. Parents should limit adolescent's exposure to adult media and use family television time to discuss the effect of seeing screen depiction of smoking on adolescent behavior.
- Work with the Ministry of Education to include effective school-based anti-smoking education in all grades of primary and secondary school, founded on preceding and systematic need assessment, new participation, interactive and "peer to peer" teaching methods, together with establishment of supportive environment and direct-link feedback on program effectiveness.
- Develop and establish a combination of strategies to reinforce the ban of sales to minors in terms of creating awareness of the regulations and the rationale that underpins them; lobby the community and suitable agencies to reinforce the principles of and prosecute offenders of the law.

GLOBAL YOUTH TOBACCO SURVEY, BULGARIA – 2015

Global Youth Tobacco Survey

Instructions

- **Please read carefully each question before answering it.**
- **Choose the answer that best describes your beliefs and feels correct, or the answer that directly relates to you and your lifestyle. There are no right or wrong answers.**
- **Choose only <u>ONE</u> answer to each question.**
- **On the <u>ANSWER SHEET,</u> find the circle that matches your answer and fill it in completely with the pencil that was given out to you. Fill in the circle as it is illustrated:**

Yes, like that  **Not like that**  **or that** 

- **If you need to change your answer, don't worry, just erase it completely without leaving marks.**
- **Remember – each question will have only ONE ANSWER and you must answer ALL QUESTIONS!**

<u>EXAMPLE:</u>

QUESTIONNAIRE:	**ANSWER SHEET**
24. **Do you think that fish live in water?** **a. Definitely yes** **b. Probably yes** **c. Probably not** **d. Definitely not**	**24.** 

Introduction

Thank you for participating in this survey.
Before you start, please read the following information. It will help you to answer the questions.
Please note:

- Some of the questions concern only **cigarettes** smoking.
- Others concern **smoking tobacco** in general, which includes cigarettes and other types of smoked tobacco products.
- Other questions ask about **smokeless tobacco** use, which is tobacco that is not smoked, but sniffed through the nose, held in the mouth, or chewed.
- Finally, other questions ask about any **tobacco use** or any **tobacco products**, including smoking cigarettes, smoking tobacco other than cigarettes, and using smokeless tobacco.
- Here is a table that provides examples of different tobacco products:

Tobacco Use:	
Smoking Tobacco Products:	**Smokeless Tobacco Products:**
Cigarettes - Manufactured cigarettes - Hand-rolled cigarettes Other types of tobacco products: - Pipes - Cigars, cigarillos - Shisha/narguile	- Tobacco for sneezing (snuff) - Chewing tobacco

THE FIRST FEW QUESTIONS ASK FOR YOUR BACKGROUND INFORMATION

1. How old are you?

a. 11 years old or younger
b. 12 years old
c. 13 years old
d. 14 years old
e. 15 years old
f. 16 years old
g. 17 years old or older

2. What is your sex?

a. Male
b. Female

3. In what grade are you in?

a. 7th grade
b. 8th grade (8 preparatory class)
c. 9th grade (8 after preparatory class, I course)

4. How much money do you have to spend on yourself; however you want, during an average school week?

a. I don't have any money to spend on myself
b. Less than 14lv
c. From 15 to 20lv
d. 21-40lv
e. 41-60lv
f. 61-80lv
g. More than 80lv

5. Do your parents work?

a. Yes, only my father
b. Yes, only my mother
c. Yes, both of my parents work
d. No, none of them
e. I don't know

THE NEXT QUESTIONS ASK ABOUT YOUR TOBACCO USE

6. Have you ever tried or experimented with cigarette smoking, even if it was one or two puffs?

a. Yes
b. No

7. How old were you when you first tried a cigarette?

a. I have never tried to smoke a cigarette

b. 7 years old or younger
c. 8 or 9 years old
d. 10 or 11 years old
e. 12 or 13 years old
f. 14 or 15 years old
g. 16 years old or older

8. During the past 30 days, on how many days did you smoke cigarettes?

a. 0 days
b. 1 or 2 days
c. 3 to 5 days
d. 6 to 9 days
e. 10 to 19 days
f. 20 to 29 days
g. Daily, all 30 days

9. Please, think about the days when you smoked cigarettes in the last 30 days. How many cigarettes did you usually smoke per day?

a. I did not smoke cigarettes in the last 30 days
b. Less than a cigarette per day
c. 1 cigarette per day
d. 2 to 5 cigarettes per day
e. 6 to 10 cigarettes per day
f. 11 to 20 cigarettes per day
g. More than 20 cigarettes per day

10. Have you ever tried or experimented with any form of smoked tobacco products other than cigarettes (e.g. pipe, cigars, cigarillos, water pipe)?

a. Yes
b. No

11. During the last 30 days, did you smoke any other forms of smoked tobacco products other than cigarettes (e.g. pipe, cigars, cigarillos, water pipe)?

a. Yes
b. No

12. Do you ever smoke tobacco or feel like smoking tobacco right after you get up in the morning?

a. I don’t smoke tobacco
b. I don’t smoke tobacco or feel like smoking tobacco right after I get up in the morning
c. Yes, I sometimes smoke tobacco or feel like smoking tobacco right after I get up in the morning
d. Yes, I always smoke tobacco or feel like smoking tobacco right after I get up in the morning

13. How soon after you smoke tobacco do you feel a strong desire to smoke again that is hard to ignore?

a. I don't smoke
b. I have never had such a strong desire to smoke again after smoking
c. Within one hour
d. 1 to 2 hours
e. 2 to 4 hours
f. More than 4 hours, but less than one full day
g. 1 to 3 days
h. 4 days or more

14. Have you ever tried any other forms of smokeless tobacco products (snuff, chewing tobacco)?

a. Yes
b. No

15. During the last 30 days, did you use any forms of smokeless tobacco products (snuff, chewing tobacco)?

a. Yes
b. No

16. During the last 30 days, how often did you smoke hand-rolled cigarettes?

a. I did not smoke hand-rolled cigarettes during the last 30 days
b. Less than once a week
c. At least once a week but not every day
d. Every day

17. During the last 30 days, how often did you smoke cigarettes (manufactured cigarette)?

a. I did not smoke manufactured cigarettes during the past 30 days
b. Less than once a week
c. At least once a week but not every day
d. Every day

18. Where do you usually smoke? (SELECT ONLY ONE RESPONSE)

a. I don't smoke
b. At home
c. At school, i.e. in the school yard, in front of school, etc.
d. At work
e. At friends' houses
f. At social gatherings
g. In public spaces (e.g. parks, street corners, entrances to buildings)
h. Other places

THE NEXT QUESTIONS ARE ABOUT YOUR ATTITUDE TOWARD STOPPING SMOKING

19. Do you want to stop smoking now?

a. I have never smoked
b. I don't smoke at the moment
c. Yes
d. No

20. During the last 12 months, did you ever try to stop smoking?

a. I have never smoked
b. I did not smoke in the last 12 months
c. Yes
d. No

21. Do you think that you would be able to stop smoking if you wanted to?

a. I have never smoked
b. I don't smoke now
c. Yes
d. No

22. Have you ever received advice or help to stop smoking? (SELECT ONLY ONE ANSWER)

a. I have never smoked
b. Yes, from a programme or professional
c. Yes, from a friend
d. Yes, from a family member
e. Yes, from both programmes or professionals AND from friends or family members
f. No

23. Would it be easy or difficult for you to go without smoking for a week

a. I don't smoke at the moment
b. Very difficult
c. Fairly difficult
d. Fairly easy
e. Very easy

24. How easy or difficult would it be for you to give up smoking if you wanted to?

a. I do not smoke at the moment
b. Very difficult
c. Fairly difficult
d. Fairly easy
e. Very easy

25. How long ago did you stop smoking?

a. I have never smoked
b. I have not stopped smoking

c. 1 - 3 months
d. 4 - 11 months
e. One year
f. 2 years
g. 3 years or longer

26. What was the main reason to stop smoking? (SELECT ONLY ONE ANSWER)

a. I have never smoked
b. I haven't stopped smoking
c. To improve my health
d. To save money
e. Because my family does not like it
f. Because my friends do not like it
g. Other reason

THE NEXT QUESTIONS ASK ABOUT YOUR EXPOSURE TO OTHER PEOPLE'S SMOKING (PASSIVE SMOKING)

27. During the last week, on how many has anyone smoked in your presence, inside your home?

a. 0 days
b. 1 to 2 days
c. 3 to 4 days
d. 5 to 6 days
e. 7 days

28. During the last week, on how many days has anyone smoked in your presence in any enclosed public places (cafes, restaurants, bars, discotheque, etc.)?

a. 0 days
b. 1 to 2 days
c. 3 to 4 days
d. 5 to 6 days
e. 7 days

29. During the last week, on how many days has anyone smoked in your presence, at any outdoor public places (e.g. sidewalks and entrances of schools and kindergarten, stadiums, playgrounds, open swimming pools etc.)?

a. 0 days
b. 1 to 2 days
c. 3 to 4 days
d. 5 to 6 days
e. 7 days

30. During the last 30 days, did you see anyone smoking inside the school building, in the school yard or on the sidewalks and entrances of school?

a. Yes

b. No

31. Do you think the smoke from other people's tobacco smoking is harmful to you?

a. Definitely not
b. Probably not
c. Probably yes
d. Definitely yes

32. Do you support the total ban on smoking inside all enclosed public places (nurseries, kindergartens, schools and universities, medical and health institutions, commercial establishments, restaurants, fast service, pubs, coffee shops and bars, hotels, motels, holiday and tourist villages, bungalows and camping, public transportation, enclosed workplaces etc.)?

a. Yes
b. No

33. Do you support the total ban on smoking at outdoor public places (e.g. sidewalks and entrances of nurseries, kindergartens, schools, stadiums, playgrounds, open swimming pools, open-air cinemas, theaters and others)?

a. Yes
b. No

THE NEXT QUESTIONS ASK ABOUT THE WAYS YOU GET CIGARETTES .

34. The last time you smoked cigarettes during the past 30 days, how did you usually get them? (SELECT ONLY ONE ANSWER)

a. I did not smoke cigarettes in the last 30 days
b. I bought them in a shop or a store
c. I bought them from a street vendor
d. I gave someone else money to buy me cigarettes
e. I got them from someone else
f. I got them some other way

35. During the last 30 days, did anyone refuse to sell you cigarettes because of your age?

a. I did not try to buy cigarettes during the last 30 days
b. Yes, someone refused to sell me cigarettes because of my age
c. No, my age was not obstacle to buying cigarettes

36. The last time you bought cigarettes in the past 30 days, how did you buy them?

a. I did not buy cigarettes in the last 30 days
b. I bought cigarettes in a pack/box
c. I bought single cigarettes
d. I bought cigarettes in a carton
e. I bought tobacco and rolled cigarettes

37. How much do you think a pack of 20 cigarettes costs on average?

a. Less than 4 lv
b. 4 to 5 lv
c. 6 to 7 lv
d. 8 to 9 lv
e. 10 lv or more
f. I don't know

38. Can you buy cigarettes, cigars, cigarillos or pipe tobacco close to your school?

a. Yes
b. No
c. I don't know

THE NEXT QUESTIONS ASK ABOUT MESSAGES AGAINST THE USE OF TOBACCO (INCLUDING CIGARETTES, CIGARS, CIGARILLOS, PIPES, WATERPIPE, SNUFF AND CHEWING TOBACCO)

39. During the last 30 days, did you come across any anti-tobacco messages on television, radio, internet, billboards, posters, newspapers, magazines, or movies?

a. Yes
b. No

40. During the last 30 days, did you come across any anti-tobacco messages during sports events, fairs, bazars, festivals, concerts, public events or social gatherings?

a. I did not attend sports events, fairs, bazars, festivals, concerts, public events or social gatherings in the last 30 days
b. Yes
c. No

41. During the last 30 days, did you see any health warnings on cigarette packages?

a. Yes, but I did not pay much attention to them
b. Yes, and they also led me to think about quitting smoking or not starting smoking
c. No

42. During the last 12 months, did anyone teach you about the dangers of smoking in any of your classes?

a. Yes
b. No
c. I don't know

43. During the past 12 months, did you discuss in any of your classes the reasons why people your age use tobacco?

a. Yes

b. No
c. Not sure

44. Has anyone in your family discussed the harmful effects of smoking tobacco with you?

a. Yes
b. No

THE NEXT QUESTIONS ASK ABOUT TOBACCO ADVERTISEMENTS OR (INCLUDING CIGARETTES, OTHER SMOKED TOBACCO PRODUCTS, SNUFF AND CHEWING TOBACCO).

45. During the last 30 days, when you watched TV, videos or movies, did you see any people smoking tobacco?

a. I did not watch TV, videos, or movies in the last 30 days
b. Yes
c. No

46. During the last 30 days, did you see any advertisements or promotions of tobacco products at points of sale (supermarkets, stores, shops, cafes, kiosk etc.)?

a. I did not visit any points of sale that sale in the last 30 days
b. Yes
c. No

47. Would you ever use or wear something with the name or the brand logo of a tobacco company or a tobacco product, such as a lighter, t-shirt, hat, or sunglasses?

a. Yes
b. Maybe
c. No

48. Do you have something (e.g. t-shirt, pen, backpack, etc.) with a tobacco product brand logo on it?

a. Yes
b. No

49. Has anyone working for a tobacco company ever offered you a free tobacco product?

a. Yes
b. No

50. During the last 30 days, did you see any videos on the Internet that promote smoking tobacco or make smoking tobacco look fun/cool?

a. I did not use the Internet in the last 30 days
b. Yes
c. No

HE NEXT QUESTIONS ASK ABOUT YOUR ATTITUDES AND BELIEFS ABOUT USING TOBACCO PRODUCTS.

51. If one of you best friends offered you a tobacco product, would you smoke it?

a. Definitely not
b. Probably not
c. Probably yes
d. Definitely yes

52. Do you think that you will use any form of tobacco product at any time during the next 12 months?

a. Definitely not
b. Probably not
c. Probably yes
d. Definitely yes

53. Once a person has started smoking tobacco, do you think it would be difficult for him/her to quit?

a. Definitely not
b. Probably not
c. Probably yes
d. Definitely yes

54. Do you think that smoking tobacco helps people feel more comfortable or makes them less comfortable at parties, celebrations or other social gathering?

a. More comfortable
b. Less comfortable
c. Does not matter whether they smoke

55. Do you agree or disagree with the following: "I think I might enjoy smoking a cigarette." (SELECT ONLY ONE ANSWER)?

a. I currently smoke cigarettes
b. Strongly agree
c. Agree
d. Disagree
e. Strongly disagree

56. Do your parents smoke tobacco?

a. Do not smoke
b. Both of them smoke
c. Only my father smokes
d. Only my mother smokes
e. I don't know

57. Do any of your closest friends smoke tobacco?

a. None of them
b. Some of them
c. Most of them
d. All of them

58. About how many students in your grade smoke tobacco?

a. Most of them
b. About half of them
c. Some of them
d. None of them

59. During the past 30 days, did you smoke tobacco to help you lose weight or keep from gaining weight?

a. I did not smoke tobacco in the past 30 days
b. Yes
c. No

THE NEXT QUESTIONS ASK ABOUT ELECTRONIC CIGARETTES SMOKING

60. Have you ever heard of electronic cigarettes?

a. Yes
b. No

61. Have you ever tried or experimented with electronic cigarette, even if it was one or two puffs?

a. Yes
b. No

62. In total, on how many days have you used an electronic cigarette or e-cigarette in your entire life?

a. 0 days
b. 1 day
c. 2 to 10 days
d. 11 to 20 days
e. 21 to 50 days
f. 51 to 100 days
g. More than 100 days

63. During the last 30 days, on how many days did you use electronic cigarettes?

a. 0 days
b. 1 or 2 days
c. 3 to 5 days

d. 6 to 9 days
e. 10 to 19 days
f. 20 to 29 days
g. All 30 days

THE NEXT QUESTIONS ASK ABOUT SHISHA SMOKING

64. Have you ever tried or experimented with shisha smoking, even if it was one or two puffs?

a. Yes
b. No

65. How old were you when you first tried to smoke shisha?

a. I have never smoked shisha
b. 7 years or younger
c. 8 or 9 years old
d. 10 or 11 years old
e. 12 or 13 years old
f. 14 or 15 years old
g. 16 years old or older

66. During the last 30 days, on how many days did you smoke shisha?

a. 0 days
b. 1 or 2 days
c. 3 to 5 days
d. 6 to 9 days
e. 10 to 19 days
f. 20 to 29 days
g. All 30 days

67. Think about the days you smoked shisha in the last month. How many times per day did you smoke shisha?

a. I did not smoke shisha in the last month
b. Less than once a day
c. Once a day
d. Twice a day
e. 3 times a day
f. 4 times or more a day

68. Do you think the smoke from other people's shisha smoking is harmful to you?

a. Definitely not
b. Probably not
c. Probably yes
d. Definitely yes

69. Where was the last time you smoked shisha during the past 30 days? (SELECT ONLY ONE ANSWER)

a. I did not smoke shish during the last 30 days
b. At home
c. In a café
d. At an oriental restaurant
e. At a shisha bar
f. At a bar/discotheque
g. Other place

70. If one of your best friends offered you shisha, would you smoke it?

a. Definitely not
b. Probably not
c. Probably yes
d. Definitely yes

71. Once someone has started smoking shisha, do you think it would be difficult for them to quit?

a. Definitely not
b. Probably not
c. Probably yes
d. Definitely yes

72. Do you think smoking shisha helps people feel more comfortable or less comfortable at celebrations, parties, or in other social gatherings?

a. More comfortable
b. Less comfortable
c. No difference whether smoking shisha or not

73. Do you agree or disagree with the following: "I think I might enjoy smoking shisha."

a. I currently smoke shisha
b. Strongly agree
c. Agree
d. Disagree
e. Strongly disagree

Thank you for participating in the survey!