



MINISTRY OF HEALTH
SEYCHELLES

2015 SEYCHELLES GLOBAL YOUTH TOBACCO SURVEY AND COMPARISON WITH GYTS IN 2007 AND 2002

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SUMMARY

OBJECTIVES: The Global Youth Tobacco Survey (GYTS) is aimed to assess behaviors, knowledge, beliefs, opinions and other variables related to tobacco use among students of secondary schools aged 13-15 years in countries worldwide using a standard methodology and questionnaire.

METHODS: We present the main findings of GYTS performed in Seychelles in 2015 and compare results with results of two previous GYTS surveys done in Seychelles in 2007 and 2002 in order to identify trends over time. In each GYTS, a two-stage cluster sample design was used to produce a representative sample of all students in grades S1, S2, S3, S4 and S5 from all public and private schools in Seychelles. Participants completed a standard self-administered questionnaire in schools on an anonymous and voluntary basis.

RESULTS

- The prevalence of students smoking at least one cigarette on at least 1 day during the past 30 days decreased to 15% of students (20% boys and 10% girls) in 2015 from 21% (23% boys and 20% girls) in 2007 and 27% (30% boys and 24% girls) in 2002.
- The prevalence of ever cigarette smokers decreased to 38% of students (44% boys and 32% girls) in 2015 from 48% in 2007 (54% boys and 42% girls) and 51% in 2002 (56% boys and 46% girls).
- In 2015, 21% of students (27% boys and 16% girls) used any tobacco product, which was lower than in 2007 (27%) and in 2002 (29%).
- The prevalence of students who had never smoked but wanted to start increased to 18% in 2015 (19% boys and 17% girls) from 15% in 2007 and 17%.
- In 2015, 23% of students started smoking cigarettes at age 13 or under (29% boys and 20% girls). This figure is similar to the one reported in 2007 (22%), but lower than the figure in 2002 (35%).
- In 2015, 68% of current smokers wanted to quit smoking (74% of boys and 57% girls). This percentage was lower than 74% in 2007 (76% boys and 71% girls) and 77% in 2002 (77% boys and 76% girls).
- In 2015, 30% of students were exposed to cigarette smoke at home during the past 7 days (28% boys and 33% girls). This percentage was lower than 42% in 2007 (38% boys and 46% girls) and 43% in 2002 (39% boys and 45% girls).
- In 2015, 41% of students had been exposed to cigarette smoke inside enclosed public places during the past 7 days (39% of boys and 43% of girls). This prevalence was lower than in the last two surveys: 57% in 2007 (54% boys and 61% girls) and 60% in 2002 (59% boys and 61% girls).
- The prevalence of students buying cigarettes from a store, shop or street vendor increased to 49% in 2015 (55% boys and 41% girls) from 28% in 2007 (36% boys and 21% girls) and 23% in 2004 (34% boys and 11% girls). Half of students bought cigarettes by individual sticks in 2015 (52% boys and 65% girls).
- The prevalence of students who saw advertisements against tobacco during the past 30 days decreased to 59% (55% boys and 62% girls) from 84% in 2007 and 90% in 2002 of girls).
- The percentage of students who were taught in school about the dangers of tobacco use decreased to 39% 2015 (36% boys and 42% girls) from 60% in 2007 (58% boys and 62% girls) and 60% in 2002 (61% boys and 60% girls).

CONCLUSIONS: The GYTS in 2015 shows that 15% of youth aged 13-15 years smoked cigarettes, which is less than 21.5% in 2007. Almost half of children were exposed to second-hand smoke in enclosed public place. The proportion of children who did not recall being taught in school about the dangers of tobacco use decreased over time. Nearly half of children who smoked bought tobacco products from a shop, often by single units. These findings emphasize the need to tighten enforcement tobacco control legislation and programs, including the ban on smoking in enclosed public places, the ban on all forms of tobacco advertising, promotion and sponsorship, and the ban on sale of smoking tobacco products to minors. School-based education programs also need to be strengthened to further raise awareness on tobacco control and develop resistance skills among children and support teens who wish to stop smoking. School-based surveys should be conducted at regular time intervals to monitor tobacco use among students and assess the impact of tobacco control programs and policy.

INTRODUCTION

The tobacco epidemic

Tobacco use is the leading cause of preventable mortality and morbidity, killing around 7 million people a year worldwide and being a main cause of morbidity. Nearly 80% of the more than 1 billion smokers worldwide live in low- and middle-income countries (LMICs) (1). This number of deaths attributable to tobacco is expected to rise to 10 million deaths annually by 2030, and around 70% of deaths are expected to occur in LMICs.

Out of the 1.2 billion people who smoke globally, more than 50 % are young people (2). Smoking initiation most often starts in childhood and adolescence (3), which emphasizes that prevention efforts must have a particular focus on children and adolescents (4). Short-term consequences of smoking among young people include more frequent addiction to nicotine, respiratory diseases, and a higher risk of using illegal drugs. Long-term health consequences include becoming regular daily smokers throughout adulthood because of addiction, respiratory diseases, cardiovascular diseases and several forms of cancer (5). The frequency with which adolescents are exposed to smokers, advertisement for smoking and smoking by peers at school are linked with their acceptability of smoking and increases the risk of smoking (6).

Despite evidence for a decreasing prevalence of tobacco use in adults in Seychelles in the past decade, the first and second GYTS conducted in students aged 13-15 years in 2007 and 2002 showed that as many as 21% and 26% of students were current smokers (7, 8). In this context, GYTS in 2015 was timely to update current trends in related factors in order to help guide current and future programs.

The Global Youth Tobacco Survey (GYTS)

The World Health Organization (WHO), spearheaded by its Tobacco Free Initiative (TFI) department, the United Nations Children' Fund (UNICEF) and the Office on Smoking and Health in the Centers for Disease Control and Prevention (OSH-CDC), have developed the Global Youth Tobacco Survey (GYTS). This survey is a standard instrument to assess the smoking prevalence and various other variables related to smoking in youths aged 13-15 years in all countries (9).

The GYTS has been administered in 151 countries worldwide, including Seychelles in 2002 and 2007 (7, 8). The Seychelles GYTS includes data on prevalence of cigarette and other forms of tobacco use, as well as information on five determinants of tobacco use: access/availability and price, environmental tobacco smoke exposure (ETS), cessation, media and advertising, and school curriculum. The GYTS is useful to assess the tobacco situation among the youth at one point in time but repeat surveys over time (e.g. every 4-5 years) also allow monitoring trends in prevalence and impact of interventions.

The GYTS is a school-based tobacco survey that focuses on students aged 13-15 years. This age is chosen because the smoking habit is taken up often in teen years or before, and monitoring (surveys) can be conveniently conducted in schools (before secondary education is completed). The GYTS aims at addressing the following issues:

- Determine the prevalence of tobacco use
- Estimate the age of initiation of cigarette use among cigarette smokers
- Estimate the levels of susceptibility to become a cigarette smoker among non-smokers
- Estimate the exposure to tobacco advertising and counter-advertising in young people
- Identify key intervening variables, such as attitudes and beliefs on behavioral norms with regard to tobacco use among young people
- Assess the extent to which prevention programs are reaching school-based populations and establish the subjective opinions of those populations regarding such interventions

The main steps of the Global Youth Tobacco Survey in Seychelles in 2015

Three previous surveys showed levels of health behaviors and risk factors among school children, including tobacco use: the Global School Based Student Health Survey (GSHS) conducted in 2007 and two Global Youth Tobacco Survey (GYTS) conducted in 2002 and 2007. The GYTS 2015 survey is therefore a third wave of the GYTS survey. Along with standard procedures used for GYTS in all participating countries, answer sheets are sent by FEDEX from Seychelles to CDC in Atlanta for automated data entry (using scanning and optic character recognition of the answers to generate an electronic data file of results).

METHODS

Sample and design

The sampling of participants to GYTS included a first-stage sampling of all schools containing grades S1-S5 and a second-stage random sampling of the eligible classes from each school that participated in the survey. All students in the selected classes were eligible to participate in the survey. Data for public schools were obtained from the Ministry of Education and data for the 4 private schools in the country were obtained from the respective schools. A list of all schools, classes and students were produced.

Questionnaire

The questionnaire was anonymous and self-administered and it maintained privacy and confidentiality by not including any information that would permit to identify participants. The questionnaire consisted of “core” and “optional” questions. Core questions are mandatorily used in all countries conducting the GYTS study and allow for international comparison of results. Optional questions address specific issues in individual countries selected by the local investigators. The wording of both core and optional questions cannot be changed (under limits of translation for questionnaires in non English language). Additional questions can be added by investigators to address specific issues. English is one of the three official languages of Seychelles (with Creole and French) and it the most common language used for teaching in schools, and therefore the questionnaire was written in English.

Regular smoking was defined as “smoking at least one cigarette on at least one day over the past 30 days”. Data on other tobacco products were obtained by the question: during the past 30 days, have you ever used any form of tobacco products other than cigarettes (e.g. chewing tobacco, snuff, dip, cigars, cigarillos, little cigars, pipe). Combining data on smoking and on other products allowed to define “tobacco use”. Of note, products other than manufactured cigarettes are virtually never used in Seychelles, except, possibly for some illegal substances such as marijuana, which may implicitly be considered as tobacco products by some adolescents. In this context, the questions on cigarette smoking are likely to be the most relevant in relation to assessing tobacco use in youths in Seychelles.

Data collection

For all GYTS surveys, the Ministry of Education (MOE) provided a list of all students from their electronic registries for the selection of the sample of eligible students. The MOE assisted in organizing the necessary contacts with the randomly selected schools. The questionnaires usually required 30–40 minutes to be administered (i.e. GYTS was administered during one class period). The survey was introduced to the participating students in each year by a field supervisor, who was the only adult person present during the administration of the questionnaire.

Analyses

A weight was associated with each questionnaire to reflect the likelihood of sampling each student within the two-stage sampling frame and to reduce bias by compensating for differing patterns of non-response. The weight used for estimation is given by the equation: $W = W1 * W2 * f1 * f2 * f3 * f4$ where $W1$ is the inverse of the probability of selecting the school, $W2$ is the inverse of the probability of selecting the classroom within the school, $f1$ is a school-level non-response adjustment factor calculated by school size category (small, medium, large), $f2$ is a class adjustment factor calculated by school, $f3$ is a student-level non-response adjustment factor calculated by class, and $f4$ is a post-stratification adjustment factor calculated by gender and grade. Analyses were made using the Microsoft Excel software. 95% confidence intervals were calculated for all weighted estimates of frequency. A graph was created for each question presented below and results were presented by survey year (2002, 2007 and 2015), overall and by sex.

RESULTS (AGE 13-15 YEARS)

1) Participation rates

All 14 schools in Seychelles that included S1 to S5 grades were selected. **Table 1** shows the distribution of participants by sex and school grade.

Table 1. Participants to the Global Youth Tobacco Survey in Seychelles in 2015

Region	Number of students who participated (%)	Number of students who participated and were aged 13-15 (as self reported)
Total	2461	1513
S1	565 (23)	46 (3)
S2	536 (22)	511 (34)
S3	548 (22)	541 (36)
S4	416 (17)	386 (25)
S5	396 (16)	29 (2)
12 and less	562 (23)	
13	585 (23)	
14	522 (21)	
15	418 (17)	
16 and more	396 (16)	

At the first stage of the sampling frame (school level), 14 (100%) of the 14 sampled schools participated, 118 (97.5%) participated of the 121 sampled classes, and at the second sampling frame (student level within each selected class), 2845 (82%) of the 3038 sampled students completed usable questionnaires. The overall response rate was therefore $100\% * 97.5\% * 81.5\% = 79.8\%$.

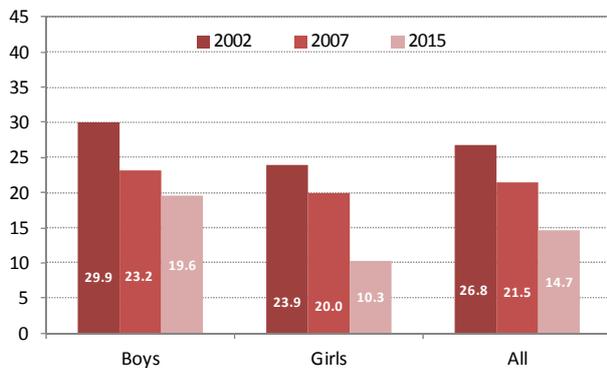
2) Tobacco use

Table 2. Proportion of tobacco use among students aged 13-15, by survey year, sex and age.

	Boys						Girls					
	2002		2007		2015		2002		2007		2015	
	N	%	N	%	N	%	N	%	N	%	N	%
Ever smoked any tobacco product												
Age 13	58	26	52	26	56	30	49	23	43	25	29	20
Age 14	80	36	90	44	65	35	83	39	67	38	58	40
Age 15	87	39	61	30	67	36	81	38	65	37	59	40
All	225	100	203	100	188	100	213	100	175	100	146	100
Currently smokes any tobacco product (at least once during past 30 days)												
Age 13	17	31	4	18	26	33	7	26	8	32	16	27
Age 14	17	31	11	50	20	25	7	26	8	32	20	33
Age 15	21	38	7	32	33	42	13	48	9	36	24	40
All	55	100	22	100	79	100	27	100	25	100	60	100
Currently smokes cigarettes (at least once during past 30 days)												
Age 13	124	29	132	33	275	39	147	30	142	33	310	38
Age 14	160	37	162	41	245	34	193	39	176	40	277	34
Age 15	146	34	103	26	191	27	151	31	118	27	227	28
All	430	100	397	100	711	100	491	100	436	100	814	100

All: estimates are equally weighted at ages 13, 14, 15 years (i.e. non weighted average).

Figure 1. Prevalence of students smoking at least one cigarette during the past 30 day , by survey year and sex

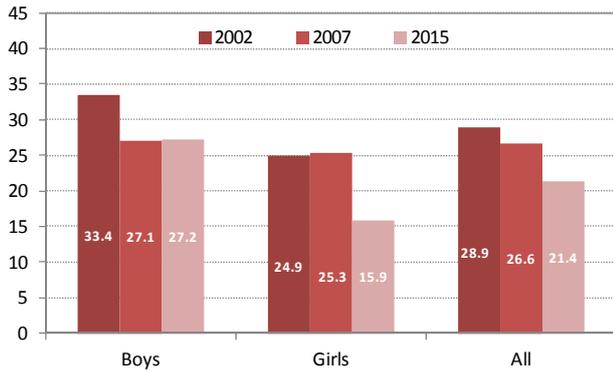


The prevalence of students smoking cigarettes (≥ 1 cigarette on ≥ 1 day during the past 30 days) was lower in 2015 (total 14.7%, boys: 19.6%, girls: 10.3%), than in 2007 (total: 21.5%, boys: 23.2%, girls: 20.0%) and in 2002 (total: 26.8%, boys: 29.9%, girls: 23.9%).

Figure 2. Prevalence of ever cigarette smokers, by survey year and sex

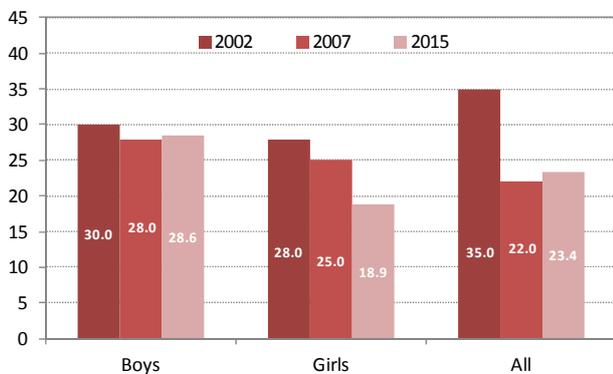


The prevalence of students ever smoking cigarettes was lower in 2015 (total 38.3%, boys 44.4%, girls: 32.4%) than in 2007 (total: 48.4%, boys: 54.1%, girls: 42.4%) and in 2002 (total: 50.6%, boys: 55.7%, girls: 45.9%) (Figure 2). Since 2002, the prevalence decreased overall by 12.3%.

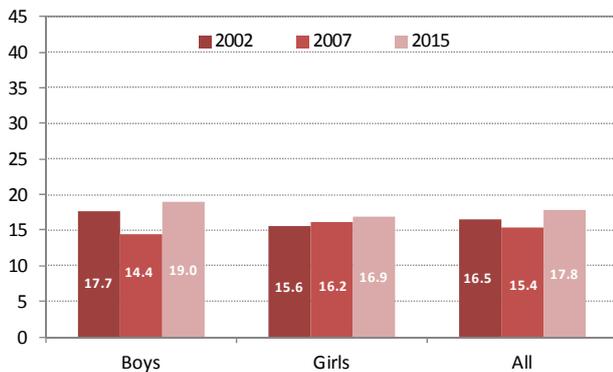
Figure 3. Prevalence of current tobacco users, by survey year and sex

The prevalence of current tobacco users was lower in 2015 (total: 21.4%, boys 27.2%, girls: 15.9%) vs 2007 (total: 26.6%, boys: 27.1%, girls: 25.3%) and 2002 (total: 28.9%, boys: 33.4%, girls: 24.9%).

2) Initiation of tobacco use and susceptibility to smoke

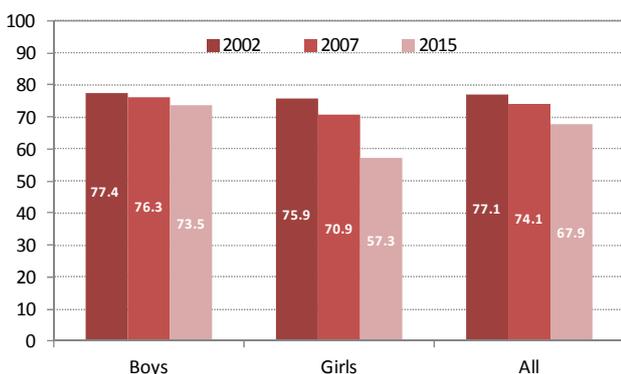
Figure 4. Percentage of students who smoked a cigarette at age 13 or younger by survey year and sex

The prevalence of students who started smoking cigarettes at the age of 13 years or under was larger in 2015 (total: 23.4%, boys 28.6%, girls: 18.9%) compared to 2007 (total: 22.0%, boys: 28.0%, girls: 25.0%) but lower compared to 2002 (total: 35.0%, boys: 30.0%, girls: 28.0%).

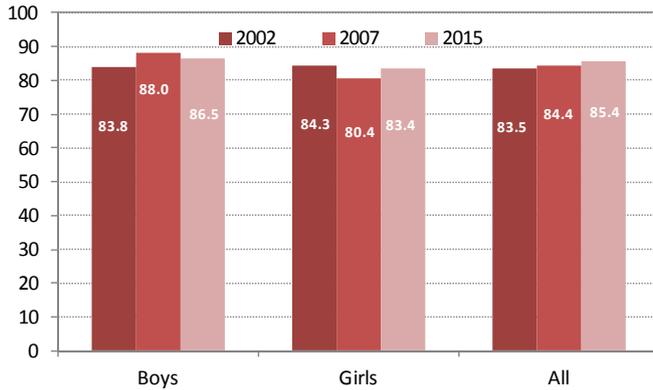
Figure 5. Proportion of never smokers who were susceptible to tobacco use, by survey year and sex

The prevalence of never smokers who wanted to start smoking was higher in 2015 (total: 17.8%, boys 19.0%, girls: 16.9%) than in 2007 (total: 15.4%, boys: 14.4%, girls: 16.2%) and in 2002 (total: 16.5%, boys: 17.7%, girls: 15.6%).

3) Smoking cessation and factors influencing tobacco use

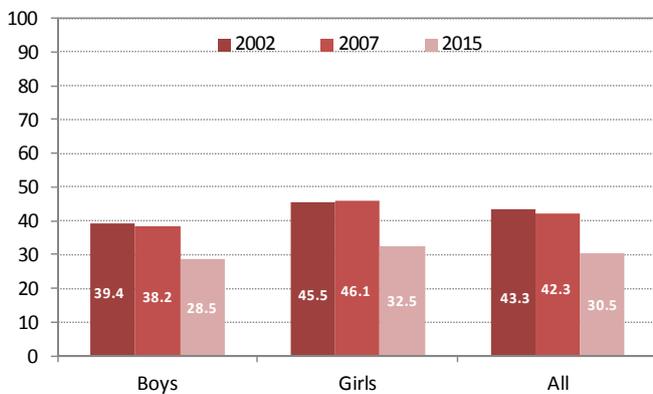
Figure 6. Proportion of smokers who attempted to quit smoking by survey year and sex

The prevalence of smoking students who wanted to stop smoking was lower in 2015 (total: 67.9%, boys 73.5%, girls: 57.3%) than in 2007 (total: 74.1%, boys: 76.3%, girls: 70.9%) and in 2002 (total: 77.1%, boys: 77.4%, girls: 75.9%) (Figure 6). More than half of current smokers wanted to stop smoking during the past 12 months, with no substantial difference by sex or by survey year.

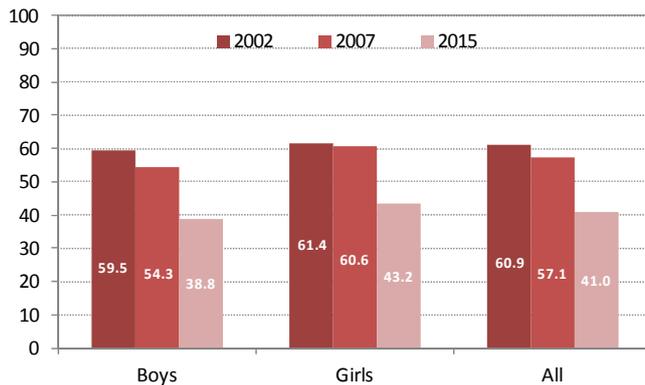
Figure 7. Proportion of smokers who thought they would be able to stop, by survey year and sex

In 2015, three quarters of students who smoked thought they would be able to stop. Overall, this prevalence increased (total: 85.4, boys: 86.5, girls: 83.4) compared to 2007 (total: 84.4, boys: 88.0, girls: 80.4) and 2002 (total: 83.5, boys: 83.8, girls: 84.3).

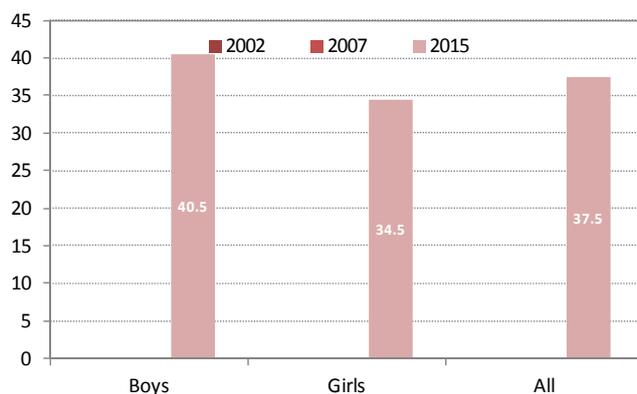
4) Environmental tobacco smoke

Figure 8. Prevalence of students exposed to tobacco smoke at home by survey year and sex

The prevalence of students exposed to tobacco smoke at home in 2015 decreased (total: 30.5, boys: 28.5, girls: 32.5) compared to 2007 (total: 42.3, boys: 38.2, girls: 46.1) and 2002 (total: 43.3, boys: 39.4, girls: 45.5).

Figure 9. Prevalence of students exposed to tobacco smoke in public places, by survey year and sex

Less than half of students reported to be exposed to tobacco smoke inside any enclosed public place in 2015. This figure decreased (total: 41.0, boys: 38.8, girls: 43.2) compared to 2007 (total: 57.1, boys: 54.3, girls: 60.6) and 2002 (total: 60.9, boys: 59.5, girls: 61.4).

Figure 10. Prevalence of students who saw anyone smoking in school premises, by survey year and sex

Almost 40% of students reported seeing anyone smoking inside the school building or outside on school property.

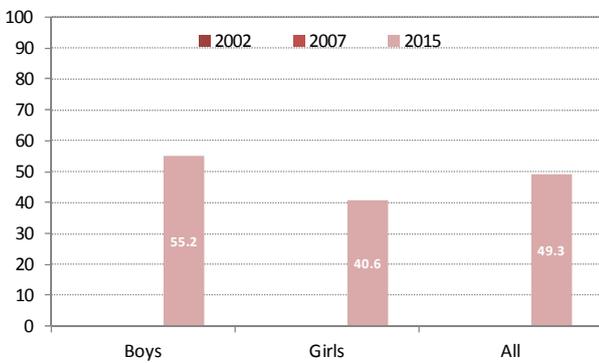
5) Access and availability

Figure 11. Proportion of smoking adolescents buying cigarettes from shops by survey year and sex



Approximately half of the current adolescents smokers got at least 1 cigarette from a shop during the past 7 days in 2015. This prevalence increased in 2015 (total: 49.3, boys: 55.2, girls: 40.6) compared to 2007 (total: 28.2, boys: 35.8, girls: 21.4), and 2002 (total: 23.4, boys: 34.3, girls: 10.8).

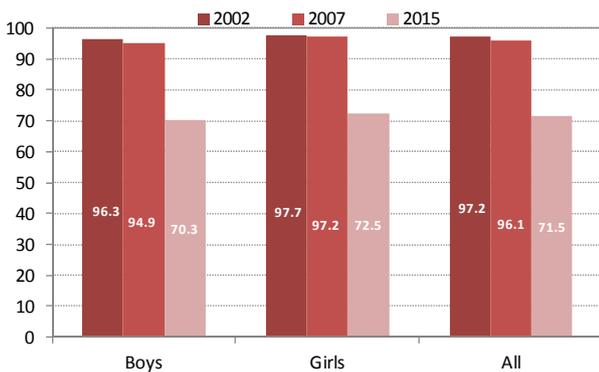
Figure 12. Prevalence of students who bought individual sticks in 2015, by sex



One out of two students bought individual sticks in 2015 (boys: 55.2% and girls: 40.6%).

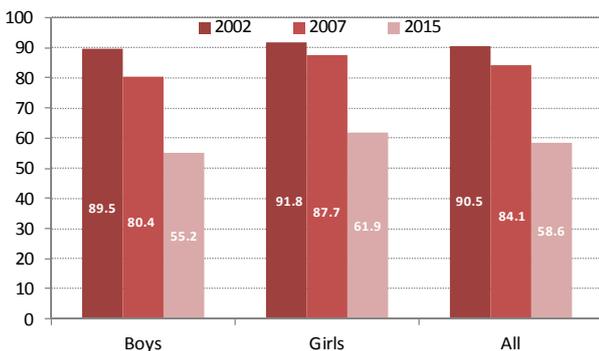
6) Media and advertising for and against smoking

Figure 13. Prevalence of students who noticed anyone using tobacco on television, videos or movies by survey year and sex

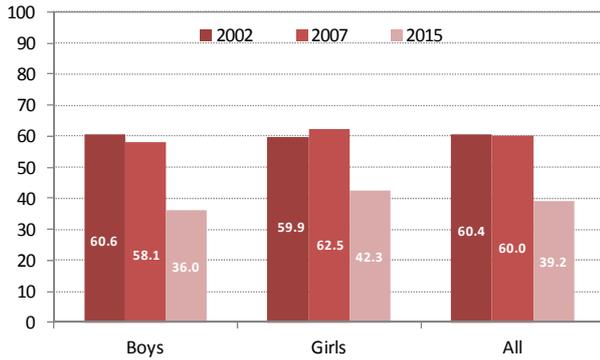


The prevalence decreased in 2015 (total: 71.5, boys: 70.3, girls: 72.5) compared to 2007 (total: 96.1, boys: 94.9, girls: 97.2) and 2002 (total: 97.2, boys: 96.3, girls: 97.9).

Figure 14. Advertisements against smoking seen by students, by survey year and sex



Also, almost 60% of students saw advertisements against smoking during the past 30 days, irrespective of sex. The proportion decreased in 2015 (total: 58.6, boys: 55.2, girls: 61.9) compared to 2007 (total: 84.1, boys: 80.4, girls: 87.7) and 2002 (total: 90.5, boys: 89.5, girls: 91.8).

Figure 15. Prevalence of students taught in school about the dangers of tobacco use, by survey year and sex

In 2015, less than 40% of the students were taught in school about the dangers of tobacco use and this figure (total: 39.2, boys: 36.0, girls: 42.3) was lower than in 2007 (total: 60.0, boys: 58.1, girls: 62.5) and 2002 (total: 60.4, boys: 60.6, girls: 59.9).

SUMMARY OF SELECTED MAIN FINDINGS

- The prevalence of students smoking at least one cigarette on at least 1 day during the past 30 days decreased between 2015 (overall 15%; 20% boys and 10% girls), 2007 (21%; 23% boys and 20% girls) and 2002 (30% boys and 24% girls).
- The prevalence of ever cigarette smokers decreased between 2015 (overall: 38.3%; 44.4% boys and 32.4% girls), 2007 (48.4% 54.1% boys and 42.4% girls), and 2002 (50.6%; 55.7% boys and 45.9% girls).
- In 2015, 21% of students (27% boys and 16% girls) used any tobacco product, which was lower than in 2007 (27%) and in 2002 (29%).
- The prevalence of never smokers who wanted to start smoking increased to 17.8% in 2015 (19.0% boys and 16.9% girls) from 15.4% in 2007 (14.4% boys and 16.2% girls) and 16.5% in 2002 (17.7% boys and 15.6% girls).
- In 2015, 23.4% of students started smoking cigarettes at age 13 or under (28.6% boys and 18.9% girls), similar to 2007 (22.0%), but lower than in 2002 (35.0%).
- In 2015, 68% of current smokers wanted to quit smoking (74% of boys and 57% girls). This percentage was lower than in 2007 (74%; 76% boys and 71% girls) and in 2002 (77%; 77% boys and 76% girls).
- In 2015, 30% of students had been exposed to cigarette smoke at home during the past 7 days (28% boys and 33% girls), which is lower than in 2007 (42%; 38% boys and 46% girls) and in 2002 (43%; 39% boys and 45% girls).
- In 2015, 41% of students had been exposed to cigarette smoke inside enclosed public places during the past 7 days (39% of boys and 43% of girls). This prevalence was lower than in 2007 (57%; 54% boys and 61% girls) and in 2002 (60%; 59% boys and 61% girls).
- The prevalence of students buying cigarettes from a shop increased to 49% in 2015 (55% boys and 41% girls) from 28% in 2007 (36% boys and 21% girls) and 23% in 2002 (34% boys and 11% girls). One out of two students bought cigarettes by individual sticks in 2015 (52% boys and 65% girls).
- The prevalence of students who saw or heard advertisements against tobacco during the past 30 days decreased to 59% (55% boys and 62% girls) in 2015 from 84% in 2007 (80% boys and 88% girls) and 90% in 2002 (89% of boys and 92% of girls).
- The percentage of students who were taught in school about the dangers of tobacco use decreased to 39% in 2015 (36% boys and 42% girls) from 60% in 2007 (58% boys and 62% girls) and 60% in 2002 (61% boys and 60% girls).

DISCUSSION

Tobacco use

Most smokers start smoking before the age of 18 years and persons who smoke their first cigarette at 14 to 16 years are 1.6 times more likely to become dependent than those who initiate smoking at an older age. Thus, an earlier start of smoking makes it more difficult to quit smoking. Adolescents start smoking at an early age to experiment, due to social pressure and advertising targeting the young. An increased risk of smoking initiation is related with lower socioeconomic status, poor academic performance, rebelliousness, and having friends and family members who smoke (10). According to the 2015 survey in Seychelles, 23.4% of students started smoking cigarettes at age 13 or under (28.6% boys and 18.9% girls).

The best practices of a comprehensive tobacco control include regulations on various aspects of tobacco use (e.g. ban on smoking in enclosed and other places, ban on tobacco advertising, promotion and sponsorship), health education interventions, cessation programs, community interventions, and adequate administration and enforcement of policy and programs (11). Such programs and policies are aimed to influence society in general and individuals to make behavior choices consistent with tobacco-free norms.

In line with the fairly favorable legislative context in Seychelles with regards to tobacco control, the prevalence of tobacco use has decreased over time in Seychelles students, but consumption remains high and should be further decreased by improving enforcement of current regulation. The GYTS 2015 findings in Seychelles show that approximately 15% of the students aged 13–15 years currently smoke cigarettes (Figure 1) and 38% are ever cigarette smokers (Figure 2). Comparison with previous GYTS studies shows a 7% absolute decrease in the prevalence of cigarette smokers (21.5% vs. 14.7%) (Figure 1) and a 10% absolute decrease in the prevalence of ever cigarette smokers in 2015 compared to 2007 (48.4% vs. 38.3%) (Figure 2). There was a 5% absolute decrease in the prevalence of tobacco use in 2015 compared to 2007 (26.6% vs. 21.4%) (Figure 3).

The decrease in smoking in 2015, as compared to 2007 and 2002, likely reflects the effects of tobacco control programs and policy in Seychelles developed since the late 1980s, including awareness programs; high tax on tobacco products (>65% of total cost of cigarette packet in 2015); comprehensive legislation on tobacco control in 2009 (12), including total ban on smoking in enclosed public places, in all public transports and in all inside and outside premises of education, health and sport places and total ban on tobacco advertising, promotion and sponsorship, which are fairly well enforced. Sale of tobacco products to minors is also prohibited below the age of 18 but there has been no attempt to assess if this regulation is well enforced and there have been no systemic control by inspectors. However, the decrease over time might have been sharper. One factor that may be raised is that the exposure of students to education programs in school has decreased, possibly with decreased efforts to sustain training on tobacco control in schools.

It should also be recognized that the prevalence of smoking among non participants tends to be larger than among participants, as shown in Seychelles in 2002 (9) and 2007 (6), so that the prevalence of smoking in the survey (which achieved a 96% participation rate) may be underestimated.

Initiation and susceptibility

Most adult smokers start smoking as teens or younger. Trying cigarettes at an early age increases the risk of becoming a regular or daily smoker, negatively affecting their health status during their lifetime (13).

The GYTS 2015 in Seychelles shows that the prevalence of initiation of smoking in students aged 13 or younger increased compared to the 2007 GYTS survey (23% vs. 22%) (Figure 4). The prevalence of never smokers aged 13-15 years who are susceptible to start smoking increased in 2015 compared to 2007 (18% vs. 15%) and such increase in the 2015 GYTS survey was more evident for boys than for girls (Figure 5). Such figures remain high and should be lowered.

Smoking cessation

The GYTS 2015 in Seychelles shows that more than half of the current youth smokers (68%) said they wanted to quit smoking and/or had tried to do so during the past 12 months (Figure 6). However, this figure is lower than in previous surveys. These results may suggest that smoking is becoming a “normal” standard among youth. Given that there is no publicity for tobacco products in all national media, these results highlight the need to increase efforts to “denormalize” tobacco use and to provide resources and counseling to support smoking cessation programs among youth. In other countries, resources have targeted clinicians and providers, parents and teachers, schools and teenagers (14). In addition, more research is required to define which interventions are effective and acceptable for young people in upper middle-income countries.

The GYTS 2015 in Seychelles also shows that 85% of smokers aged 13-15 years thought they would be able to stop (Figure 7). The schools in Seychelles include teachings on the dangers of tobacco use. However, the prevalence of students who reported to have been taught about tobacco control was decreasing over time: this calls for scaling up health education programs on tobacco control in schools and providing quit smoking programs.

Environmental tobacco exposure

Second hand smoke increases the risk of asthma, respiratory diseases, infections, cardiovascular effects, behavior problems, sleep difficulties, and cancer (5). Also, growing evidence is showing that third hand smoke has negative consequences on health by the effect of remaining gases and particles on those entering environments which surround smokers (16, 17). A decrease in tens of thousands of deaths from a variety of causes related to smoking has been found in countries that have instituted a ban on smoking in enclosed premises.

The GYTS in 2015 in Seychelles shows that 29% of boys and 33% of girls reported exposure to tobacco smoke at any home (Figure 8) and 41% of students aged 13-15 years reported being exposed to tobacco smoke inside enclosed public places (Figure 9). These figures are lower than the ones found in 2007 and 2002. Also, 38% of students saw anyone smoking inside the school building or outside on school property (Figure 10). These findings occurred despite a total ban on smoking in all enclosed public places, e.g. in restaurants, bars and discotheques, which was implemented since 2009, consistent with Article 8 of the Framework Convention on Tobacco Control (18). In other countries, the ban on smoking in enclosed public places has been associated with a reduction of the total sales of cigarettes and per capita sales of cigarette packs (19). The still fairly high exposure reported by students is consistent with exposures in open outdoor premises and further restrictions on second hand smoke, e.g. in streets, beaches or other places where people gather.

Access and availability

The GYTS in 2015 shows that half of students in Seychelles who currently smoke purchased cigarettes from shopkeepers (Figure 11) despite legislation banning the sale of tobacco products to minors, a measure that was already applicable in the Amendment to the 1998 Children Act (20). The figure was 21% higher in 2015 than in 2007, and 26% higher than in 2002. These figures emphasize a lack of enforcement of the ban on the sale of cigarettes to minors. This reminds that even in countries that have adopted strong tobacco control policies, adequate administrative mechanisms are needed to ensure that laws are enforced, including inspections and penalties for trespassers (21). Also, GYTS 2015 showed that the sale of cigarettes by single units is still broadly practiced (Figure 12) despite the law requesting that cigarettes should be sold only in packets, consistent with article 16 of the WHO FCTC that specifies that “sale by units encourages cigarette use by persons with low purchasing power” and “promotes youth smoking” (22).

Media against smoking- anti-tobacco advertising

The 2015 GYTS shows that as many as 72% noticed anyone using tobacco on television, videos or movies (Figure 13), despite the national ban on advertisement of tobacco products in all national media since 2009. Also, only 59% watched anti-tobacco messages in the media (Figure 14) and this figure decreased in time compared to the previous GYTS surveys. These results call for regulations to ban tobacco advertisement in other mass media, including movies and trans-border channels, and to increase exposure of youth to the dangers of smoking.

Only 39% of students reported to have been taught in school about the dangers of tobacco use in the past 12 months (Figure 15). This percentage is markedly lower in the 2015 survey than in 2007 and 2002, which stresses the need for strengthening health education on this topic as part of the school curriculum, including appropriate training of to student peer leaders and teachers.

CONCLUSIONS

The GYTS study in 2015 showed a decreasing prevalence of cigarettes smoking amongst students in Seychelles, although the prevalence remains high. The decreasing prevalence is likely related to the comprehensive legislation implemented in the interval, as well as continued awareness programs in the mass media over the past three decades. However, large proportions of students do not recall having been taught about tobacco control at school, and this proportion is markedly decreasing in 2015 compared to 2002 and 2007, suggesting that health education on tobacco control must be reinforced in schools and included as an explicit component of the school curriculum. Efforts to reduce smoking in schools must be strengthened for several reasons: smoking is addictive and once started in children the habit is quite likely to track into adulthood, it is by far the largest preventable cause of disease and reducing smoking may be a strategy to reduce the use of illegal substances since smoking cigarettes is a getaway to using illegal substances, and the use of such illegal substances is on a high increase in Seychelles. Although the slightly downward trends of smoking in youth is welcome, the still high prevalence prompts for a review of tobacco control measures being implemented and a plan of action targeting youth that reinforces tobacco control measures.

RECOMMENDATIONS

Awareness of and susceptibility to tobacco products begin in early years as children and teenagers are exposed to tobacco advertisements (currently often “below the line” e.g. through movies, internet, etc.). This may occur despite the total ban on advertisement, promotion and sponsorship in Seychelles, e.g. when adolescents witness tobacco use by others (parents or peers), see tobacco products in stores (although display is limited by law) (22). Importantly, smoking in youth is a gateway to the use of other substances and risky behaviors. Thus, interventions to prevent tobacco use in students remain an important strategy to prevent the short and long term negative health and social consequences of tobacco use and an effective strategy to reduce the use of other substances. The following issues are particularly important with respect to tobacco use among young people:

- Continue increasing taxes on tobacco products to decrease demand by children and youth to buy tobacco products.
- While a total ban on smoking is enforced in Seychelles in all enclosed public premises and on all transports, as well as stadium and other sport premises, there is a need to ensure full enforcement of these measures, including through regular monitoring by inspectors.
- There is a need to monitor and strengthen enforcement of the ban on sales of cigarettes to minors, and to take dissuasive measures to those shops that do not enforce this ban, including penalties and possibly withdraw license of shops, as allowed by the law.
- Although a total ban on tobacco advertising, promotion and sponsoring has been implemented in Seychelles, and is well enforced, there is a need to further identify, and address, “below the line” advertising through the internet, movies, display at sale points, etc.
- There is a need to consider plain packaging, consistent with evidence that plain packaging substantially reduced the attractiveness of cigarette packets for the youths.
- Educational programs in schools and in the mass media should be strengthened with the aims of teaching youth about the short and long-term effects of smoking and other social, economic, and environmental issues related to tobacco use. Programs should focus on strengthening skills of students, peers and teachers and include a comprehensive approach to use of harmful and illicit substances and risky behaviors. Teachers, parents and families should be invited to participate in these programs.
- A quit smoking program accessible to the youth should be developed and maintained, including counseling and the provision of nicotine replacement therapy or similar treatments.
- The GYTS or similar surveillance programs are important tools to monitor and compare trends between years. Such surveys should be conducted at regular time intervals to monitor tobacco use among students and guide tobacco control programs.

REFERENCES

1. World Health Organization. Tobacco Fact sheet 2016. Available from: <http://www.who.int/mediacentre/factsheets/fs339/en/>.
2. Ribeiro Sarmiento D, Yehadji D. An analysis of global youth tobacco survey for developing a comprehensive national smoking policy in Timor-Leste. *BMC Public Health*. 2016;16:65.
3. Centers for Disease Control and Prevention. Surgeon General's Report—Preventing Tobacco Use Among Youth and Young Adults. Centers for Disease Control and Prevention, 2012.
4. Kostova D, Ross H, Blecher E, Markowitz S. Is youth smoking responsive to cigarette prices? Evidence from low- and middle-income countries. *Tobacco Control*. 2011;20:419-24.
5. World Health Organization. Health effects of smoking among young people 2016. Available from: http://www.who.int/tobacco/research/youth/health_effects/en/.
6. Hudson S, Thomson G. Policymakers and the example of smoking to children: A qualitative study. *Tobacco Induced Diseases*. 2011;9:1-3.
7. Viswanathan B, William J, Madeleine G, Warren W, Bovet P. The Global youth tobacco survey in the Seychelles. Ministry of Health, Seychelles, 2007.
8. Bovet P, Viswanathan B, Warren W. The Global youth tobacco survey in the Seychelles. Ministry of Health, Seychelles, 2002.
9. Centers for Disease Control and Prevention. Global Youth Tobacco Survey (GYTS) — Overview 2016 Available from: <http://nccd.cdc.gov/gtssdata/Ancillary/Documentation.aspx?SUID=1&DOCT=1>.
10. Wellman RJ, Dugas E, Dutczak H, O'Loughlin EK, Datta GD, Lauzon B, O'Loughlin J. Predictors of the Onset of Cigarette Smoking. *American Journal of Preventive Medicine* 2016;51:767-778.
11. Nutritional Center for Chronic Disease Prevention and Health Promotion. Best Practices for Comprehensive Tobacco Control Programs, 2014.
12. Bovet P, Viswanathan B, Louange M, Gedeon J. National Survey of Noncommunicable Diseases in Seychelles, 2013-2014 (Seychelles Heart Study IV) : methods and main findings. Ministry of Health, Seychelles, 2015.
13. Nonnemaker JM, Farrelly M. Smoking initiation among youth: The role of cigarette excise taxes and prices by race/ethnicity and gender. *Journal of Health Economics*. 2011;30:560-7.
14. American Cancer Society, Legacy for the Longer Healthier Lives, CDC, National Cancer Institute, National Institute on Drug Abuse, Robert Wood Johnson Foundation. Youth Tobacco Cessation Collaborative 2010. Available: <http://www.youthtobaccocessation.org/resources/programs.html>.
15. Treyster Z, Gitterman B. Second hand smoke exposure in children: environmental factors, physiological effects, and interventions within pediatrics. *Rev Environ Health*. 2011;26:187-95.
16. Dhall S, Alamat R, Castro A, et al. Tobacco toxins deposited on surfaces (third hand smoke) impair wound healing. *Clin Sci (Lond)*. 2016;130:1269-84.
17. Acuff L, Fristoe K, Hamblen J, Smith M, Chen J. Third-Hand Smoke: Old Smoke, New Concerns. *J Community Health*. 2016;41:680-7.
18. WHO Framework Convention on Tobacco Control. Geneva: World Health Organization, 2005.
19. Galeone D, Laurendi G, Vasselli S, et al. Preliminary effects of Italy's ban on smoking in enclosed public places. *Tobacco Control*. 2006;15:143-46.
20. Government of Seychelles. Children Act of 1998 Section 73. Official Gazette 1998.
21. Sandford A. Government action to reduce smoking. *Respirology*. 2003;8:7-16.
22. Thrasher JF, Villalobos V, Dorantes-Alonso A, et al. Does the availability of single cigarettes promote or inhibit cigarette consumption? Perceptions, prevalence and correlates of single cigarette use among adult Mexican smokers. *Tobacco Control*. 2009;18:431-7.
23. Corbett KK. Susceptibility of youth to tobacco: a social ecological framework for prevention. *Respiration Physiology*. 2001;128:103-18.

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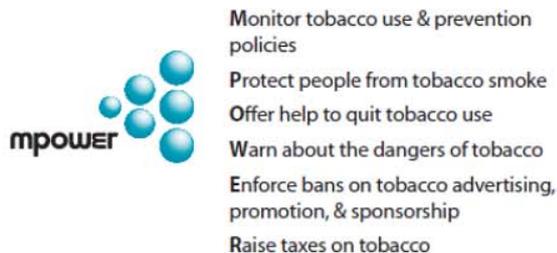
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APPENDIX I: Fact sheet, GYTS Seychelles 2015

GYTS Objectives

The Global Youth Tobacco Survey (GYTS), a component of the Global Tobacco Surveillance System (GTSS), is a global standard for systematically monitoring youth tobacco use (smoking and smokeless) and tracking key tobacco control indicators.

GYTS is a nationally representative school-based survey of students in grades associated with 13 to 15 years of age and is designed to produce cross-sectional estimates for each country. GYTS uses a standard core questionnaire, sample design, and data collection protocol. It assists countries in fulfilling their obligations under the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) to generate comparable data within and across countries. WHO has developed MPOWER, a package of selected demand reduction measures contained in the WHO FCTC:



GYTS Methodology

GYTS uses a global standardized methodology that includes a two-stage sample design with schools selected with a probability proportional to enrollment size. The classes within selected schools are chosen randomly and all students in selected classes are eligible to participate in the survey. The survey uses a standard core questionnaire with a set of optional questions that permits adaptation to meet the needs of the country on tobacco use and key tobacco control indicators. The questionnaire covers 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, it is anonymous to ensure confidentiality.

In Seychelles, GYTS was conducted in 2015 by the Ministry of Health. The overall response rate was 79.8%. A total of 2,485 eligible students in grades S1-S5 completed the survey, of which 1,525 were aged 13-15 years. Data is reported for students aged 13-15.

GYTS Highlights

TOBACCO USE

- 21.4% of students, 27.2% of boys, and 15.9% of girls currently used any tobacco products.
- 20.2% of students, 25.6% of boys, and 15.2% of girls currently smoked tobacco.
- 14.7% of students, 19.6% of boys, and 10.3% of girls currently smoked cigarettes.
- 1.7% of students, 2.8% of boys, and 0.6% of girls currently used smokeless tobacco.
- 7.3% of students, 10.0% of boys, and 4.7% of girls currently used electronic cigarettes.

CESSATION

- Almost 7 in 10 current smokers tried to stop smoking in the past 12 months.
- More than 6 in 10 current smokers wanted to stop smoking now.

SECONDHAND SMOKE

- 30.5% of students were exposed to tobacco smoke at home.
- 41.0% of students were exposed to tobacco smoke inside enclosed public places.

ACCESS & AVAILABILITY

- 49.3% of current cigarette smokers obtained cigarettes by buying them from a store, shop, or street vendor.
- Among current cigarette smokers who bought cigarettes, 59.4% were not prevented from buying them because of their age.

MEDIA

- 6 in 10 students noticed anti-tobacco messages in the media.
- Almost 1 in 4 students noticed tobacco advertisements or promotions when visiting points of sale.
- More than 1 in 10 students owned something with a tobacco brand logo on it.

KNOWLEDGE & ATTITUDES

- 44.9% of students definitely thought other people's tobacco smoking is harmful to them.
- 70.1% of students favored banning smoking inside enclosed public places.

[Country MOH Logo]

[Country IA Logo]



APPENDIX II: Questionnaire, GYTS Seychelles 2015

Introduction

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

- Some of the questions will ask about smoking **cigarettes**.
- Some questions will ask you about **smoking tobacco**. This includes cigarettes and other types of smoked tobacco products (e.g. shisha, hand rolled cigarettes, etc), but this does not include marijuana or other drugs.
- Some questions will ask you about using **smokeless tobacco**. This refers to tobacco products that are not smoked, but can be sniffed through the nose, held in the mouth, or chewed.
- Some questions will ask you about any **tobacco use** or any **tobacco products** – this includes smoking cigarettes, smoking tobacco other than cigarettes, and using smokeless tobacco. But this does not include marijuana or other drugs.
- Here is a chart that provides examples of various tobacco products:
-

Any Tobacco Use	
Smoking Tobacco includes:	Smokeless Tobacco includes:
<ul style="list-style-type: none"> — Cigarettes — Manufactured cigarettes — Hand-rolled cigarettes — Kretek cigarettes <p>Other types of smoked tobacco</p> <ul style="list-style-type: none"> — Pipes — Cigars, mini cigars/cigarillos — Waterpipes/hookah/shisha/narguileh/hubble-bubble <p>— This does <u>not</u> include marijuana and other illegal drugs</p>	<ul style="list-style-type: none"> — Snuff — Chewing tobacco — Dip <p style="text-align: center;">This does <u>not</u> include marijuana and other illegal drugs</p>

The first few questions ask for some background information about yourself.

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. Boy
 - b. Girl
3. **In what grade/form are you?**
 - a. S1
 - b. S2
 - c. S3
 - d. S4
4. **During a day, how much pocket money do you get on average?**
 - a. I generally don't receive any pocket money
 - b. Less than SR 11
 - c. SR 11-20
 - d. SR 21-30
 - e. SR 31-40
 - f. SR 41-50
 - g. More than SR 50
5. **Do your parents work (not accounting for house work)?**
 - a. Father (stepfather or mother's partner) only
 - b. Mother (stepmother or father's partner) only
 - c. Both
 - d. Neither
 - e. Don't know
6. **Do your parents (father, stepfather, mother, stepmother) own a car or a pick up?**
 - a. Yes
 - b. No
7. **Do you have cable TV or dish TV at home?**
 - a. Yes
 - b. No

The next questions ask about your use of tobacco.

8. Have you ever tried or experimented with cigarette smoking, even one or two puffs?
 - a. Yes
 - b. No

9. **How old were you when you first tried a cigarette?**
 - a. I have never tried smoking 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
10. **During the past 30 days, on how many days did you smoke cigarettes?**
 - a. I did not smoke cigarettes during the past 30 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
11. **Please think about the days you smoked cigarettes during the past 30 days. How many cigarettes did you usually smoke per day?**
 - a. I did not smoke cigarettes during the past 30 days
 - b. Less than 1 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
12. **Have you ever tried or experimented with any form of smoked tobacco products other than cigarettes (such as cigars, cigarillos, little cigars, shisha, water pipe)?**
 - a. Yes
 - b. No
13. **During the past 30 days, did you use any form of smoked cigarettes or tobacco products other than cigarettes (such as cigars, cigarillos, little cigars, shisha, water pipe)?**
 - a. Yes
 - b. No
14. **Do you ever smoke cigarettes or feel like smoking cigarettes or other forms of tobacco first thing in the morning?**
 - a. I don't smoke cigarettes or other forms of tobacco
 - b. No, I don't smoke tobacco or feel like smoking tobacco first thing in the morning
 - c. Yes, I sometimes smoke tobacco or feel like smoking tobacco first thing in the morning

- d. Yes, I always smoke tobacco or feel like smoking tobacco first thing in the morning

15. How soon after you smoke cigarettes or other forms of tobacco do you start to feel a strong desire to smoke again that is hard to ignore?

- a. I don't smoke cigarettes or other forms of tobacco
 b. I never feel a strong desire to smoke again after smoking tobacco
 c. Within 60 minutes
 d. 1 to 2 hours
 e. More than 2 hours to 4 hours
 f. More than 4 hours but less than one full day
 g. 1 to 3 days
 h. 4 days or more

16. Have you ever tried or experimented with any form of smokeless tobacco products (i.e. tobacco products that do not burn, such as chewing tobacco, snuff, dip)?

- a. Yes
 b. No

17. During the past 30 days, did you use any form of smokeless tobacco products (such as chewing tobacco, snuff, dip)?

- a. Yes
 b. No

The next questions ask about shisha smoking (water pipe smoking).

18. Have you ever tried or experimented with shisha smoking, even one or two puffs?

- a. Yes
 b. No

19. During the past 30 days, on how many days did you smoke shisha?

- a. I did not smoke shisha during the past 30 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

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

- a. I currently smoke shisha
 b. I strongly agree
 c. I agree
 d. I disagree
 e. I strongly disagree

The next questions are about **electronic cigarettes**. Electronic cigarettes, or e-cigarettes, are electronic devices that usually contain a nicotine-based liquid that is vaporized and inhaled. You may also know them as vape-pens, hookah-pens, electronic hookahs (e-hookahs), electronic cigars (e-cigars), electronic pipes (e-pipes), or e-vaporizers. Some look like cigarettes and others look like pens or small pipes. These are battery-powered devices that produce vapor instead of smoke.

21. Before today, had you ever heard of electronic cigarettes or e-cigarettes?

- a. Yes
 b. No

22. During past 30 days, on how many days did you use electronic cigarettes?

- a. I did not use electronic cigarettes during the past 30 days
 b. 1 or 2 days
 c. 3 to 5 days
 d. 6 to 9 days
 e. 10 or 19 days
 f. 20 to 29 days
 g. All 30 days

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

- a. I never used electronic cigarettes
 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

24. Do you agree or disagree with the following: "I think I might enjoy smoking electronic cigarettes."

- a. I currently smoke electronic cigarettes
 b. I strongly agree
 c. I agree
 d. I disagree
 e. I strongly disagree

The next questions ask about your feelings toward stopping smoking.

25. Do you want to stop smoking now?

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

26. **During the past 12 months, did you ever try to stop smoking?**
- I have never smoked
 - I did not smoke during the past 12 months
 - Yes
 - No
27. **Do you think you would be able to stop smoking if you wanted to?**
- I have never smoked
 - I don't smoke now
 - Yes
 - No
28. **Have you ever received help or advice to help you stop smoking?**
- I have never smoked
 - Yes, from a program or professional
 - Yes, from a friend
 - Yes, from a family member
 - Yes, from both programs or professionals and from friends or family members
 - No

The next questions ask about your exposure to other people's smoking.

29. **During the past 7 days, on how many days has anyone smoked inside your home, in your presence?**
- 0 day
 - 1 to 2 days
 - 3 to 4 days
 - 5 to 6 days
 - 7 days
30. **During the past 7 days, on how many days has anyone smoked in your presence, inside any enclosed public place, other than your home (such as school, shops, restaurants, shopping malls, movie theaters)?**
- 0 day
 - 1 to 2 days
 - 3 to 4 days
 - 5 to 6 days
 - 7 days
31. **During the past 7 days, on how many days has anyone smoked in your presence, at any outdoor public place (such as playgrounds, sidewalks, entrances to buildings, parks, beaches)?**
- 0 day
 - 1 to 2 days
 - 3 to 4 days
 - 5 to 6 days
 - 7 days

32. **During the past 30 days, did you see anyone smoke inside the school premises (whether inside or outside) on school property (dan lakour lekol)?**
- Yes
 - No
33. **How often do you see your parents (or stepfather or step mother) smoke cigarettes inside your home?**
- They don't smoke
 - About every day
 - Sometimes
 - Never
34. **Do you think the smoke from other people's tobacco smoking is harmful to you?**
- Definitely not
 - Probably not
 - Probably yes
 - Definitely yes
35. **Are you in favor of banning smoking inside enclosed public places (such as schools, shops, restaurants, shopping malls, movie theaters)?**
- Yes
 - No
36. **Are you in favor of banning smoking at outdoor public places (such as playgrounds, sidewalks, entrances to buildings, parks, beaches)?**
- Yes
 - No

The next questions ask about getting cigarettes.

37. **The last time you smoked cigarettes during the past 30 days, how did you get them? (SELECT ONLY ONE RESPONSE)**
- I did not smoke any cigarettes during the past 30 days
 - I bought them in a store or shop
 - I bought them from a street vendor
 - I got them from someone else
 - I got them some other way
38. **During the past 30 days, did anyone refuse to sell you cigarettes because of your age?**
- I did not try to buy cigarettes during the past 30 days
 - Yes, someone refused to sell me cigarettes because of my age
 - No, my age did not prevent me from buying cigarettes
39. **The last time you bought cigarettes during the past 30 days, how did you buy them?**

- a. I did not buy cigarettes during the past 30 days
 - b. I bought them in a pack
 - c. I bought individual sticks (singles)
 - d. I bought them in rolls
 - e. I bought tobacco and rolled my own
40. **On average, how much do you think a pack of 10 cigarettes costs (e.g. packet of Mahe King)?**
- a. SR 20-40
 - b. SR 41-60
 - c. SR 61-80
 - d. More than SR 80
 - e. I don't know

The next questions ask about messages that are against using cigarettes or other tobacco products.

41. **During the past 30 days, did you see or hear any anti-tobacco media messages on television, radio, internet, billboards, posters, newspapers, magazines, or movies?**
- a. Yes
 - b. No
42. **During the past 30 days, did you see or hear any anti-tobacco messages at sports events, fairs, concerts, or community events, or social gatherings?**
- a. I did not go to sports events, fairs, concerts, or community events, or social gatherings in the past 30 days
 - b. Yes
 - c. No
43. **During the past 30 days, did you see any health warnings on cigarette packages?**
- a. I did not see any cigarette packet during the past 30 days
 - b. Yes, I saw cigarette packets but I don't remember if there was a health warning on it or not
 - c. Yes, I saw health warnings on cigarette packets and they led me to think about quitting smoking or not starting smoking
 - d. Yes, I saw health warnings on cigarette packets but it did not make me think about quitting or starting smoking
44. **During the past 12 months, were you taught in any of your classes about the dangers of tobacco use?**
- a. Yes
 - b. No
 - c. I don't know

The next questions ask about advertisements or promotions for tobacco or cigarettes.

45. **During the past 30 days, did you see any people using tobacco on TV, in videos, or in movies?**
- a. I did not watch TV, videos, or movies in the past 30 days
 - b. Yes
 - c. No
46. **During the past 30 days, did you see any advertisements or promotions for tobacco products at points of sale (such as stores, shops, super markets, etc.)?**
- a. I did not visit any points of sale in the past 30 days
 - b. Yes
 - c. No
47. **Would you ever use or wear something that has a tobacco company or tobacco product name or picture on it such as a lighter, t-shirt, hat, or sunglasses?**
- a. Yes
 - b. Maybe
 - c. No
48. **Do you have something (for example, t-shirt, pen, backpack) with a tobacco product brand logo on it?**
- a. Yes
 - b. No
49. **Has a person working for a tobacco company ever offered you a free tobacco product?**
- a. Yes
 - b. No

The next questions ask about your attitudes and beliefs about using tobacco.

50. **If one of your best friends offered you a cigarette or other tobacco product, would you use it?**
- a. Definitely not
 - b. Probably not
 - c. Probably yes
 - d. Definitely yes
51. **At anytime during the next 12 months do you think you will use cigarettes or any form of tobacco?**
- a. Definitely not
 - b. Probably not
 - c. Probably yes
 - d. Definitely yes
52. **Once someone has started smoking cigarettes or other tobacco products, do you think it would be difficult for them to quit?**

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

53. Do you think smoking cigarettes or other tobacco products 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 or not

54. Do you agree or disagree with the following: "I think I might enjoy smoking a cigarette."

- a. I currently smoke cigarettes
- b. I strongly agree
- c. I agree
- d. I disagree
- e. I strongly disagree

55. Do your parents smoke cigarettes?

- a. None of them
- b. Both
- c. Father / stepfather only
- d. Mother / stepmother only
- e. I don't know

56. Do any of your closest friends smoke cigarettes?

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

57. About how many students in your class smoke cigarettes?

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

58. Do you think smoking cigarettes makes young people look more or less attractive?

- a. More attractive
- b. Less attractive
- c. No difference from non-smokers

59. Does your "boyfriend" or "girlfriend" smoke cigarettes?

- a. I do not have a boyfriend or a girlfriend
- b. Never
- c. Occasionally but not every week
- d. Every week, but not every day
- e. Every day

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

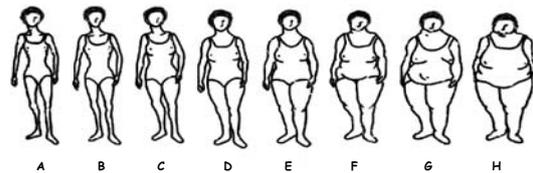
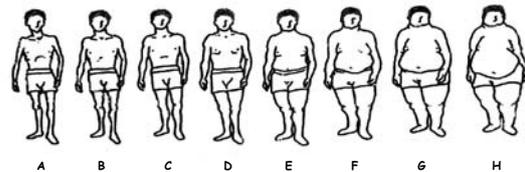
- a. I did not smoke cigarettes in the past 30 days
- b. Yes
- c. No

61. How would you describe your weight?

- a. Very underweight
- b. Slightly underweight
- c. About the right weight
- d. Slightly overweight
- e. Very overweight

62. Choose, based on the figure below, which drawing best reflects how you think you look?

- a. Drawing A
- b. Drawing B
- c. Drawing C
- d. Drawing D
- e. Drawing E
- f. Drawing F
- g. Drawing G
- h. Drawing H



63. Based on the same drawing, choose which drawing best reflects how you would like to look?

- a. Drawing A
- b. Drawing B
- c. Drawing C
- d. Drawing D
- e. Drawing E
- f. Drawing F
- g. Drawing G
- h. Drawing H

The next questions are about drinking alcohol. This includes drinking beer, Guinness, wine, spirits (whiskey, rum, vodka, Takamaka, or tropical), Vermouth, Porto, Martini, liquors (Vodka Breezer, Bacardi Breezer, Red Ice, Black Ice, etc), baka, kalu, or lapire. Drinking alcohol does not include drinking a few sips of wine for religious purposes.

- a. Yes
- b. No

We thank you for your response.

64. Have you ever tried or experimented drinks containing alcohol, at least once?

- a. Yes
- b. No

65. During the past 30 days, on how many days did you have at least one drink containing alcohol?

- a. I did not drink alcohol during the past 30 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

66. During your entire life, how many times did you drink so much alcohol that you were drunk?

- a. Never
- b. 1 or 2 times
- c. 3 to 9 times
- d. 10 or more times

The next questions are about marijuana and other drugs

67. During your life, how many times have you used or experimented drugs, such as marijuana, cannabis, hashish, lapay, steam, stuff, joint, or tyalas? (do not include heroine, cocaine, or ecstasy)

- a. Never
- b. 1 or 2 times
- c. 3 to 9 times
- d. 10 or more times

68. During the past 30 days, how many times have you used drugs, such as marijuana, cannabis or hashish, lapay, steam, stuff, joint, or tyalas? (do not include heroine, cocaine, or ecstasy)

- a. Never
- b. 1 or 2 times
- c. 3 to 9 times
- d. 10 or more times

69. Have you ever tried cocaine, heroine, lapoud, sache, or ecstasy?

APPENDIX III: Overall results, GYTS Seychelles 2002, 2007 and 2015

Prevalence	Seychelles_2002			Seychelles_2007			Seychelles_2015		
	Overall	Boys	Girls	Overall	Boys	Girls	Overall	Boys	Girls
TOBACCO USE									
Smoked Tobacco									
Current tobacco smokers	NA	NA	NA	24.1 (19.7 - 29.0)	23.7 (17.8 - 30.9)	23.8 (19.0 - 29.3)	20.2 (17.2 - 23.6)	25.6 (21.7 - 30.0)	15.2 (11.9 - 19.1)
Current cigarette smokers	26.8 (21.9 - 32.2)	29.9 (23.3 - 37.4)	23.9 (18.7 - 30.0)	21.5 (16.7 - 27.2)	23.2 (17.4 - 30.2)	20.0 (15.0 - 26.2)	14.7 (12.1 - 17.8)	19.6 (16.2 - 23.4)	10.3 (7.5 - 13.8)
Frequent cigarette smokers	1.8 (1.1 - 3.0)	2.7 (1.4 - 5.3)	0.8 (0.3 - 2.3)	0.5 (0.2 - 1.6)	0.4 (0.1 - 2.6)	0.6 (0.1 - 2.6)	2.1 (1.6 - 2.9)	3.6 (2.5 - 5.1)	0.8 (0.4 - 1.7)
Current smokers of other tobacco	NA	NA	NA	6.4 (4.7 - 8.5)	5.9 (3.5 - 10.0)	6.1 (4.0 - 9.0)	9.7 (7.7 - 12.2)	12.0 (9.3 - 15.4)	7.5 (5.4 - 10.4)
Ever tobacco smokers	NA	NA	NA	NA	NA	NA	46.2 (41.8 - 50.6)	53.1 (48.3 - 57.9)	39.4 (34.1 - 45.0)
Ever cigarette smokers	50.6 (46.1 - 55.1)	55.7 (49.3 - 61.9)	45.9 (39.0 - 52.9)	48.4 (42.4 - 54.4)	54.1 (46.8 - 61.3)	42.4 (35.2 - 49.9)	38.3 (33.9 - 42.8)	44.4 (39.7 - 49.3)	32.4 (27.1 - 38.2)
Ever smokers of other tobacco	NA	NA	NA	NA	NA	NA	23.5 (20.3 - 27.0)	28.6 (24.4 - 33.2)	18.7 (15.3 - 22.6)
Smokeless Tobacco									
Current smokeless tobacco users	NA	NA	NA	5.5 (3.4 - 8.7)	5.2 (2.8 - 9.3)	5.4 (3.3 - 8.7)	1.7 (1.1 - 2.6)	2.8 (1.7 - 4.4)	0.6 (0.3 - 1.5)
Ever smokeless tobacco users	NA	NA	NA	NA	NA	NA	4.9 (3.7 - 6.3)	6.5 (4.6 - 9.1)	3.3 (2.2 - 4.9)
Tobacco Use									
Current tobacco users	28.9 (24.6 - 33.7)	33.4 (27.5 - 39.8)	24.9 (20.2 - 30.4)	26.6 (21.7 - 32.1)	27.1 (20.6 - 34.7)	25.3 (20.4 - 30.9)	21.4 (18.3 - 24.8)	27.2 (23.1 - 31.8)	15.9 (12.6 - 19.8)
Ever tobacco users	NA	NA	NA	NA	NA	NA	47.5 (43.1 - 52.1)	54.5 (49.6 - 59.4)	40.8 (35.3 - 46.6)
Susceptibility									
Never tobacco users susceptible to tobacco use ²	16.5 (12.9 - 20.9)	17.7 (12.1 - 25.2)	15.6 (11.2 - 21.4)	15.4 (12.1 - 19.4)	14.4 (9.5 - 21.2)	16.2 (12.4 - 20.9)	17.8 (14.7 - 21.3)	19.0 (15.0 - 23.7)	16.9 (12.8 - 21.9)
Never smokers who thought they might enjoy smoking a cigarette	NA	NA	NA	NA	NA	NA	3.9 (2.6 - 5.8)	6.2 (3.8 - 10.2)	2.3 (1.3 - 4.3)
CESSATION									
Tried to stop smoking in the past 12 months ¹	77.1 (68.1 - 84.2)	77.4 (66.5 - 85.6)	75.9 (58.1 - 87.7)	74.1 (64.2 - 82.0)	76.3 (62.6 - 86.1)	70.9 (51.9 - 84.6)	67.9 (58.6 - 75.9)	73.5 (62.4 - 82.3)	57.3 (44.2 - 69.5)
Want to stop smoking now ¹	76.1 (67.4 - 83.2)	79.5 (66.8 - 88.2)	72.3 (61.9 - 80.8)	73.4 (63.2 - 81.5)	74.4 (58.0 - 85.9)	74.0 (57.1 - 85.8)	62.2 (52.9 - 70.6)	65.7 (54.7 - 75.3)	55.8 (42.1 - 68.7)
Thought they would be able to stop ¹	83.5 (76.0 - 89.0)	83.8 (73.3 - 90.6)	84.3 (71.4 - 92.0)	84.4 (72.2 - 91.8)	88.0 (74.3 - 94.9)	80.4 (61.9 - 91.2)	85.4 (78.1 - 90.5)	86.5 (77.5 - 92.3)	83.4 (71.8 - 90.9)
Received help/advice from a program or professional to stop smoking	NA	NA	NA	NA	NA	NA	17.3 (12.4 - 23.5)	21.0 (14.1 - 30.0)	11.0 (5.9 - 19.5)
SECONDHAND SMOKE									
Exposed to tobacco smoke at home ⁴	43.3 (40.0 - 46.7)	39.4 (33.8 - 45.3)	45.5 (40.3 - 50.9)	42.3 (38.3 - 46.4)	38.2 (33.3 - 43.4)	46.1 (40.3 - 52.1)	30.5 (28.2 - 33.0)	28.5 (24.9 - 32.3)	32.5 (29.1 - 36.1)
Exposed to tobacco smoke inside any enclosed public place ^{4,5}	60.9 (56.9 - 64.8)	59.5 (54.1 - 64.8)	61.4 (55.1 - 67.3)	57.1 (53.1 - 61.1)	54.3 (48.6 - 59.9)	60.6 (54.4 - 66.6)	41.0 (37.6 - 44.5)	38.8 (34.6 - 43.1)	43.2 (38.8 - 47.7)
Exposed to tobacco smoke at any outdoor public place ⁴	NA	NA	NA	NA	NA	NA	50.5 (47.0 - 54.1)	48.1 (43.4 - 52.9)	52.9 (48.6 - 57.2)
Saw anyone smoking inside the school building or outside on school property	NA	NA	NA	NA	NA	NA	37.5 (34.1 - 41.0)	40.5 (36.4 - 44.8)	34.5 (30.4 - 38.8)
ACCESS & AVAILABILITY									
Buying them from a store [†]	23.4 (17.7 - 30.4)	34.3 (24.9 - 45.1)	10.8 (6.0 - 18.5)	28.2 (22.2 - 35.2)	35.8 (27.0 - 45.7)	21.4 (14.1 - 31.0)	49.3 (41.2 - 57.5)	55.2 (43.7 - 66.1)	40.6 (32.6 - 49.2)
Not prevented from buying cigarettes because of their age	77.1 (58.8 - 88.8)	78.4 (59.4 - 90.0)	78.4 (36.1 - 95.9)	66.6 (47.3 - 81.6)	62.8 (38.8 - 81.8)	72.0 (41.5 - 90.3)	59.4 (48.7 - 69.3)	56.0 (43.7 - 67.6)	65.7 (49.4 - 79.1)
Individual sticks	NA	NA	NA	NA	NA	NA	56.0 (45.3 - 66.2)	51.6 (40.1 - 62.8)	65.2 (43.1 - 82.3)
MEDIA									
Tobacco Industry Advertising									
Noticed tobacco advertisements or promotions at points of sale	NA	NA	NA	NA	NA	NA	23.9 (20.5 - 27.6)	26.5 (21.8 - 31.8)	21.6 (17.7 - 26.1)
Noticed anyone using tobacco on television, videos, or movies	97.2 (94.7 - 98.5)	96.3 (92.5 - 98.2)	97.9 (95.0 - 99.1)	96.1 (93.5 - 97.7)	94.9 (90.1 - 97.4)	97.2 (94.9 - 98.4)	71.5 (68.6 - 74.1)	70.3 (66.0 - 74.2)	72.5 (68.4 - 76.3)
Ever offered a free tobacco product from a tobacco company ³	7.6 (5.4 - 10.6)	10.5 (7.2 - 15.0)	5.3 (3.2 - 8.6)	7.8 (5.7 - 10.7)	9.3 (6.5 - 13.3)	5.7 (3.4 - 9.5)	6.8 (5.2 - 8.8)	9.3 (7.0 - 12.2)	4.4 (2.8 - 7.0)
Owned something with a tobacco brand logo on it	18.2 (15.5 - 21.1)	19.8 (16.0 - 24.3)	16.6 (12.8 - 21.2)	16.2 (13.4 - 19.5)	16.8 (12.8 - 21.7)	15.9 (12.4 - 20.3)	13.9 (11.8 - 16.2)	18.6 (15.4 - 22.2)	9.4 (7.4 - 11.9)
Anti-Tobacco Advertising									
Anti-tobacco messages in the media	90.5 (86.4 - 93.5)	89.5 (85.3 - 92.6)	91.8 (86.6 - 95.1)	84.1 (80.3 - 87.3)	80.4 (74.8 - 84.9)	87.7 (83.4 - 91.0)	58.6 (55.2 - 61.9)	55.2 (50.4 - 60.0)	61.9 (58.1 - 65.5)
Anti-tobacco messages at sporting or community events	88.3 (85.0 - 91.0)	85.6 (81.8 - 88.8)	90.4 (85.7 - 93.6)	80.3 (75.9 - 84.0)	78.8 (72.3 - 84.1)	81.8 (76.9 - 85.8)	43.4 (39.5 - 47.3)	47.8 (42.6 - 53.0)	38.9 (34.0 - 44.0)
Thought about quitting smoking because a warning label	NA	NA	NA	NA	NA	NA	49.5 (42.5 - 56.4)	55.0 (46.0 - 63.7)	40.3 (29.4 - 52.3)
Taught in school about the dangers of tobacco use	60.4 (54.1 - 66.4)	60.6 (53.5 - 67.3)	59.9 (52.3 - 67.0)	60.0 (55.1 - 64.6)	58.1 (52.5 - 63.6)	62.5 (56.4 - 68.2)	39.2 (35.1 - 43.5)	36.0 (31.3 - 41.0)	42.3 (37.1 - 47.6)
KNOWLEDGE & ATTITUDES									
Definitely thought it is difficult to quit once someone starts smoking tobacco	NA	NA	NA	NA	NA	NA	28.9 (26.2 - 31.7)	24.2 (20.8 - 27.8)	33.4 (29.5 - 37.6)
Thought smoking tobacco helps people feel more comfortable at celebrations, parties, and social gatherings	NA	NA	NA	NA	NA	NA	27.4 (24.2 - 30.9)	29.5 (25.6 - 33.7)	25.5 (21.2 - 30.3)
Definitely thought other people's tobacco smoking is harmful to them	60.1 (54.1 - 65.8)	57.5 (50.3 - 64.4)	62.8 (56.4 - 68.7)	55.5 (49.2 - 61.7)	51.3 (45.1 - 57.4)	59.7 (51.4 - 67.5)	44.9 (41.6 - 48.2)	41.5 (37.3 - 45.8)	48.2 (44.4 - 52.1)
Favored banning smoking inside enclosed public places ⁵	64.8 (56.6 - 72.2)	63.8 (55.4 - 71.5)	65.9 (56.4 - 74.3)	62.7 (55.9 - 69.1)	58.7 (51.4 - 65.7)	67.2 (58.6 - 74.7)	70.1 (64.6 - 75.0)	66.7 (60.2 - 72.7)	73.3 (67.7 - 78.3)
Favored banning smoking at outdoor public places	NA	NA	NA	NA	NA	NA	52.2 (48.0 - 56.3)	48.1 (42.8 - 53.4)	56.1 (51.3 - 60.8)

* Cell size is less than 35

NA: Indicator was not included in survey

¹ Among current cigarette user/2015 among current smoked tobacco user² Among current cigarette user/2015 among current tobacco user³ Cigarette brand/2015 tobacco brand⁴ During past 7 days⁵ Enclosed or outdoor public places/2015 Enclosed public places[†] 2015 source from a store, shop, or street vendor