

Linking Global Youth Tobacco Survey (GYTS) Data to the WHO Framework Convention on Tobacco Control (FCTC): The Case for the Seychelles[☆]

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Abstract

Tobacco control has been recognized as a main public health concern in Seychelles for the past two decades. Tobacco advertising, sponsoring and promotion has been banned for years, tobacco products are submitted to high taxes, high-profile awareness programs are organized regularly, and several other control measures have been implemented. The Republic of Seychelles was the first country to ratify the WHO Framework Convention on Tobacco Control (FCTC) in the African region. Three population-based surveys have been conducted in adults in Seychelles and results showed a substantial decrease in the prevalence of smoking among adults between 1989 and 2004. A first survey in adolescents was conducted in Seychelles in 2002 (the Global Youth Tobacco Survey, GYTS) in a representative sample of 1321 girls and boys aged 13–15 years. The results show that approximately half of students had tried smoking and a quarter of both boys and girls had smoked at least one cigarette during the past 30 days. Although “current smoking” is defined differently in adolescents (≥ 1 cigarette during the past 30 days) and in adults (≥ 1 cigarette per day), which precludes direct comparison, the high smoking prevalence in youth in Seychelles likely predicts an increasing prevalence of tobacco use in the next adult generation, particularly in women. GYTS 2002 also provides important data on a wide range of specific individual and societal factors influencing tobacco use. Hence, GYTS can be a powerful tool for monitoring the situation of tobacco use in adolescents, for highlighting the need for new policy and programs, and for evaluating the impact of current and future programs.

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Introduction

Tobacco control has been an important public health concern in Seychelles for the past two decades. This focus resulted from high-profile awareness campaigns for tobacco control since the late 1980s, commitment to tobacco control of several key players and policy makers, particularly in the Ministry of Health and in the mass media, and early establishment of a focal point for tobacco control that allowed coordination of various nationwide activities. Seychelles participated actively in the intergovernmental negotiations for the Framework Convention on Tobacco Control (FCTC) and Seychelles was the first country in the

African region to ratify the treaty in November 2003. The FCTC, which is the world’s first public health treaty on tobacco control, calls on countries to develop and implement comprehensive national tobacco control action plans and policies, such as bans on direct and indirect tobacco advertising, sponsorship and promotion, appropriate tax measures on tobacco products, promoting smoke-free public places and workplaces, and placing health messages on tobacco packaging (WHO, 2003).

A number of tobacco control measures have been in place in the Seychelles for years (Bovet, 2001). Since colonial times (before 1976) smoking was completely banned on public transport (i.e., buses). By directive in 1994, the Minister of Health (MOH) issued a complete ban on smoking in the outside and inside premises of all health facilities. Smoking is also banned in the outside and inside premises of all schools. In 1999, the national airlines company “Air Seychelles” prohibited smoking on domestic and international flights. For the past decade, tobacco

[☆] Statement: The findings and conclusions in this report are those of the authors and do not necessarily represent the views of their respective institutions.

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advertising has been banned on national TV and radio, in local newspapers and magazines, and on billboards and outdoor walls, and this ban is fully implemented. Vending machines that sell cigarettes cannot be found in Seychelles. In 2001, the Children Act of 1998 (section 73) was amended to include a ban on the sale of tobacco products to anyone under the age of 18 years. Annually, the MOH conducts community awareness programs on “Tobacco or Health” and high profile nationwide activities for World No Tobacco Day, including a press release and a message by the Minister of Health or other high officials. In 2000, the MOH established a multi-sectoral National Committee for Tobacco Control to develop a comprehensive tobacco control plan and a smoking cessation program to be presented to the Government. This Committee, in collaboration with national and international experts, has finalized a draft for a comprehensive Tobacco Control Bill, which is highly compliant with the FCTC and is now scheduled to be presented to the National Assembly.

One important provision of the FCTC is the obligation for countries to establish programs for national, regional, and global surveillance (WHO, 2003). The World Health Organization (WHO), the U.S. Centers for Disease Control and Prevention (CDC), and the Canadian Public Health Association have developed the Global Tobacco Surveillance System (GTSS) to assist WHO Member States in establishing continuous tobacco control surveillance and monitoring (Global Tobacco Surveillance System Collaborating Group, 2005). The GTSS includes collection of data through three surveys: the Global Youth Tobacco Survey (GYTS) for youth, the Global School Personnel Survey (GSPS) and the Global Health Professional Survey (GHPS) for selected adult target groups.

The Global Youth Tobacco Survey (GYTS) uses a standardized methodology for constructing sampling frames, selecting schools and classes, preparing questionnaires, carrying out field procedures, and processing data. The GYTS questionnaire is self-administered in classrooms and school, class, and student anonymity is maintained throughout the GYTS process. Country-specific questionnaires consist of a core set of questions that all countries ask as well as a set of unique country-specific questions. The final country questionnaire is translated in-country into local languages and back-translated to check for accuracy. GYTS country research coordinators conduct focus groups of students aged 13–15 to further test the accuracy of the translation and student understanding of the questions.

The purpose of this paper is to present data from the GYTS conducted in Seychelles in 2002 and to elaborate on how it can serve as an instrument for monitoring and strengthening tobacco control programs and policies nationally. In particular, we present data on the prevalence of direct or indirect exposure to tobacco smoke and selected factors influencing tobacco use (e.g. exposure to media and advertising, access and availability of tobacco products, tobacco-related school curricula) and we relate these findings to existing or needed programs and policy.

Methods

The Global Youth Tobacco Survey (GYTS) uses a two-stage cluster sample design that produces representative samples of students in grades associated with ages 13–15 years. The sampling frame includes all schools containing any

of the identified grades. At the first sampling stage, the probability of schools being selected is proportional to the number of students enrolled in the specified grades. At the second sampling stage, classes within the selected schools are randomly selected. In the selected classes, all students attending school on the day the survey is administered are eligible to participate. Student participation is voluntary and anonymous using self-administered questionnaires. The GYTS sample design produces representative, independent, cross-sectional estimates for students aged 13–15 years old.

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

The GYTS data in this report are from a nationally representative sample in Seychelles in 2002, with a school response rate of 100%, student response rate of 90.9%, overall response rate (school rate * student rate) of 90.9%, and 1,321 students completed the questionnaire (Bovet et al., 2002, 2006a,b; Fach et al., 2006). Data from this survey will further enhance the capacity of the country and states to develop, implement, and evaluate tobacco control programs. In October 2007, the Ministry of Health has completed the second national GYTS in Seychelles and results are not yet analyzed.

The following data are presented in this report: lifetime cigarette use; initiation of smoking before the age of 10 years; current cigarette smoking (defined as smoking at least one cigarette during the past 30 days); current use of tobacco products other than cigarettes; susceptibility¹ of never smokers to initiate smoking during the next year; dependency on cigarettes among current smokers; smokers who want to stop, have tried to stop, and received help to stop smoking; exposure to secondhand smoke (SHS) at home; exposure to SHS in public places; desire for a ban on smoking in public places; students who saw advertisements for cigarettes on billboards or newspapers or magazines; students who have an object with a cigarette brand logo on it; access and availability to cigarettes among smokers; and proportions of students who were taught in school that smoking is dangerous or had discussion on factors that influence smoking.

Results

Prevalence

Half of the students (50.6%) in Seychelles reported that they had ever smoked cigarettes, even one or two puffs (Table 1). Almost a fifth of the students (18.9%) reported that they initiated smoking before the age of 10 years. Approximately a quarter of students (26.8%) were “current smokers” (i.e. smoked at least 1 cigarette on at least 1 day during the past 30 days), with no statistical difference between boys and girls. Among never smokers, 16.5% indicated that they were susceptible to initiating smoking during the next year.

Cessation

Over three quarters of current smokers wanted to stop smoking now (76.1%) and tried to stop smoking during the past year but failed (77.1%) (Table 1). Two thirds of current smokers (65.7%) reported that they had ever received help to stop

¹ Susceptibility, defined as the absence of a firm decision not to smoke, precedes the early experimentation stage of smoking onset. Smoking onset is generally agreed to be a time-dependent, four-level process that includes: 1) preparation, 2) early experimentation, 3) more advanced regular but non-daily smoking, and 4) a stable level of addiction (Pierce et al., 1996).

Table 1
Prevalence (%) of tobacco use and interest in cessation among students aged 13–15 years by gender, Seychelles Global Youth Tobacco Survey, 2002

	Total (95% CI)	Boys (95% CI)	Girls (95% CI)
Ever smoked cigarettes, even one or two puffs	50.6 (46.1–55.1)	55.7 (49.3–61.9)	45.9 (39.0–52.9)
Ever smokers who initiated smoking before age of 10 years	18.9 (15.0–23.5)	21.6 (16.6–27.6)	15.1 (10.8–20.8)
Current smoker (≥ 1 cigarette on ≥ 1 day during past 30 days)	26.8 (21.9–32.2)	29.9 (23.3–37.4)	23.9 (18.7–30.0)
Never smokers susceptible to initiate smoking in the next year	16.5 (12.9–20.9)	17.7 (12.1–25.2)	15.6 (11.2–21.4)
Current cigarette smokers who wanted to stop smoking now	76.1 (67.4–83.2)	79.5 (66.8–88.2)	72.3 (61.9–80.8)
Current cigarette smokers who tried to stop smoking during the year prior to the survey	77.1 (68.1–84.2)	77.4 (66.5–85.6)	75.9 (58.1–87.7)
Current smokers who have ever received help to stop smoking in the year prior to the survey	65.7 (58.6–72.1)	67.3 (58.9–74.6)	64.1 (53.5–73.5)

95% confidence intervals between brackets.

smoking. There were no statistical differences by gender for any of these indicators of cessation.

Second hand smoke

Nearly half of the students (43.3%) reported that they had been exposed to second hand smoke (SHS) at home and nearly two thirds (60.9%) were exposed to SHS in public places during the week prior to the survey (Table 2). A ban of smoking in enclosed public places was supported by 64.8% of students. There were no statistical differences by gender for any of these indicators.

Media and advertising

Regarding direct advertising, 62.3% of the students had seen ads for cigarettes in newspapers or magazines in the month prior to the survey (Table 2). For indirect advertising, 18.2% of the students reported that they have an object (i.e., t-shirt, cap, book bag, etc) with a cigarette brand logo on it.

Access and availability

Among current smokers, 23.4% usually bought their cigarettes in a store, with the rate for boys (34.3%) significantly higher than for girls (10.8%) (Table 2). Of those current smokers who

bought cigarettes in a store, 77.1% had not been refused purchase because of their age in the month prior to the survey. Slightly less than 1 in 10 (7.6%) of all students had ever been offered free cigarettes by a cigarette company representative.

School curricula

Students were asked if, during the past school year, they had been taught in school about the health effects on tobacco use (Table 2). Sixty percent reported that they had been taught about the dangers of tobacco use; 42% had classes in which discussions were held on the reasons why people their age smoke; and 53% reported that they had been taught about effects of smoking.

Discussion

Some main findings can be singled out. First, approximately half of the students aged 13–15 years have tried smoking and a quarter reported current smoking (i.e. smoking at least one cigarette during the past 30 days) and these proportions were not different between boys and girls. Second, a majority of children reported to be exposed to second hand smoke. Third, 62% of students reported having seen tobacco advertising. Fourth, as many as 23% of under-aged smokers reported purchasing cigarettes from shops and most of them were not questioned

Table 2
Prevalence (%) of factors influencing tobacco use among students aged 13–15 years by gender, Seychelles Global Youth Tobacco Survey, 2002

	Total (95% CI)	Boys (95% CI)	Girls (95% CI)
<i>Exposure to second hand smoke</i>			
Exposed to smoking from others at home in the past 7 days	43.3 (40.0–46.7)	39.4 (33.8–45.3)	45.5 (40.3–50.9)
Exposed to smoke in public places in the past 7 days	60.9 (56.9–64.8)	59.5 (54.1–64.8)	61.4 (55.1–67.3)
Thought smoking should be banned in public places	64.8 (56.6–72.2)	63.8 (55.4–71.5)	65.9 (56.4–74.3)
<i>Media and advertising</i>			
Saw ads for cigarettes in newspapers or magazines in the past month	62.3 (55.6–68.6)	59.8 (51.4–67.7)	64.4 (56.9–71.3)
Had an object with a cigarette brand logo on it	18.2 (15.5–21.1)	19.8 (16.0–24.3)	16.6 (12.8–21.2)
<i>Access and availability</i>			
Current smokers who usually bought their cigarettes in a store	23.4 (17.7–30.4)	34.3 (24.9–45.1)	10.8 (6.0–18.5)
Current smokers who usually bought their cigarettes in a store who were not refused purchase because of their age	77.1 (58.8–88.8)	78.4 (59.4–90.0)	78.4 (36.1–95.9)
Ever been offered “free” cigarettes by a cigarette company representative	7.6 (5.4–10.6)	10.5 (7.2–15.0)	5.3 (3.2–8.6)
<i>Taught in school about tobacco</i>			
At school during the past year, taught dangers of smoking tobacco	60.4 (54.1–66.4)	60.6 (53.5–67.3)	59.9 (52.3–67.0)
At school during the past year, discussed reasons why people their age smoke	41.6 (34.9–48.6)	41.2 (34.2–48.6)	42.5 (34.9–50.4)
At school during the past year, taught about the effects of smoking	53.0 (45.8–60.1)	53.5 (45.6–61.2)	53.4 (45.1–61.6)

95% confidence intervals between brackets.

about their age. Fifth, around 60% of students were taught about health effects of tobacco in class during past 12 months. Sixth, three quarters of current smokers wished and/or tried to quit during past 12 months.

The prevalence of tobacco use is high in Seychelles compared to other countries in Africa although higher prevalence has been reported in some other countries (Warren et al., 2006; Global Youth Tobacco Survey Collaborative Group, 2002). It is interesting to examine data in youth with reference to smoking prevalence in adults. Several population-based surveys have been conducted in adults aged 25–64 years in the Seychelles and smoking prevalence declined substantially for both men and women between 1989 (54% males; 10% females), 1994 (37% males; 7% females), and 2004 (31% males; 4% females) (Bovet et al., 1991, 1997, 2006a,b). This decreasing prevalence of smoking in adults is likely to reflect important tobacco control measures over the past decades, as highlighted in the introduction section of this paper.

The high prevalence of smoking in youth in Seychelles is therefore a matter of concern. It should however be acknowledged that the significance of smoking in youth (defined as smoking at least 1 cigarette on at least 1 day during the past 30 days) is not directly comparable with smoking in adults (defined as smoking at least 1 cigarette per day). Hence, the value of youth smoking to predict adult smoking remains to be validated in different populations, and specifically in Seychelles, e.g. which proportion of current youth smokers are experimenters who will not sustain smoking and whether this proportion is the same in boys and in girls. None withstanding this methodological issue, the high proportion of boys and girls who currently report smoking is likely to predict higher prevalence of adult smoking in the next adult generation than in the current one. This is particularly true for the current generation of female adolescents who have similar prevalence of smoking than their boy counterparts, which contrasts with less than 10% smoking prevalence among adult women (but 31% in men) in 2004. These findings therefore suggest that after a substantial decline in adult prevalence of smoking from 1989 to 2004, the prevalence of smoking might be increasing in the future, especially for women, which would result in an increase in morbidity and mortality attributable to tobacco. The data suggest that tobacco control measures targeting children should have high priority in order to avoid a possible rebound in the prevalence of smoking in the next generation of adults. A most critical intervention targeting youth is the implementation of a smoking ban in public places (smoking is currently not banned in enclosed public or working places, except for schools, health facilities and transport). A ban of smoking inside of restaurants, bars and discotheques may be particularly important since youth often gather in such places during their free time and non-smokers may start smoking under the influence of smoking peers or adults.

Another main finding in this study is that 43% of boys and girls reported exposure to second hand smoke (SHS) at home and 61% in public places. It is well demonstrated that exposure to SHS increases the risk of cardiovascular disease, cancer and other smoke-related diseases among non-smokers (U.S. Environmental Protection Agency, 1992; California Environmental Protection Agency, 1997; IARC, 2004; California Environmental

Protection Agency, 2005; Barnoya and Glantz, 2005). In particular, the 2006 U.S. Surgeon General Report showed that SHS is harmful to the health of the general public and is particularly dangerous to children (U.S. Department of Health and Human Services, 2006): SHS increases the risk of serious respiratory problems in children, such as asthmatic attacks and respiratory tract infections, increases the risk for middle ear infections, and is a known human carcinogen. Legislation requiring smoke-free public places, at least in enclosed premises, is therefore likely to be a central measure, as part of a comprehensive tobacco control program, to reduce exposure to SHS. Furthermore, a ban of smoking in public/working places is also effective for reducing tobacco users' daily tobacco consumption and supports cessation (Task Force on Community Preventive Services, 2001). High tax on cigarette products is another powerful measure to deter from smoking or reduce consumption among smokers. Current level of tax on tobacco product is high in Seychelles but this rate must be continuously increasing over time.

With regards to promotion of tobacco products, this study shows that approximately 60% of students saw advertisements for smoking in newspapers or magazines during the past 30 days. The significance of this finding deserves comment. Cigarette advertising in national electronic and printed media and on billboards has been banned for decades. The promotion of tobacco products (e.g. provision of free cigarette samples) has been non-existent for decades and sponsoring of cultural or sportive events by tobacco companies, which was already minimal in the past, has been totally banned recently (Bovet, 2001). However, there is no regulation to ban tobacco advertising that is not produced locally (e.g. imported newspapers, cable TV, Internet). However, few young people read international newspapers as local circulation of such journals is limited. Also, no direct tobacco advertising appears on the currently available cable TV stations. Furthermore, reliability and precision of data remain an issue when data are obtained from anonymous, self-reported questionnaire, particularly in youth persons who may not read and/or understand well the questions. For example, 7.6% of students reported being given cigarettes by cigarette company representatives. This figure, although low, is at odds with the fact that, for decades, cigarettes have never been given for free or at a discounted price in Seychelles, whether through promotion events, by company representatives or through other ways.

Hence, further studies should identify where and how youth in Seychelles are impregnated with tobacco advertising. One can speculate that smoking seen in movies (i.e. actors smoking) may be an important channel and that even minimal exposure (e.g. through episodic reading of international journals) may have high impact due to the notoriously high appeal of tobacco advertising. These findings emphasize that the ban on tobacco advertising in Seychelles must extend to trans-boarder advertising, including imported journals, the Internet and, as much as possible, by ensuring that smoking is not depicted in movies, video clips or other programs seen on TV, cinemas, home video, and video games.

As many as 23% of youth smokers purchased cigarettes in shops and 77% of young buyers were not asked about their age in the month prior the survey. There is a law in Seychelles that bans the sale of tobacco products to minors, including serious

penalties to offenders. Our finding underlies that this provision should be better enforced by adequately empowered officers. Easy access to cigarettes in shops by youth also emphasizes that new regulations should prohibit the sale of cigarettes by single units to both adults and children, as recommended by the FCTC, since such sale facilitates cigarette use by persons with low purchasing power (which includes youth).

Around 60% of students had been taught about the dangers of tobacco use during the past school year. This fairly high level of exposure to health education is consistent with the fact that tobacco is a topic included in the normal curriculum for primary and secondary students (within the “Personal and Social Education” program). The fact that 40% of students did not remember a discussion on tobacco during the past 12 months stresses the need to administer such health education more often, through innovative and appealing techniques, and to regularly provide relevant training to teachers to better equip them to teach these topics.

Finally, we found that almost 80% of current smokers stated that they wanted to quit smoking and/or had tried to do so during the past 12 months. This finding emphasizes the need to provide more information on the addictive nature of tobacco use through school-based health education programs and to develop and implement a formal tobacco cessation program accessible to youth, including counseling and possibly provision of nicotine replacement therapy or similar treatments.

In conclusion, while the prevalence of smoking among adults has decreased substantially over the past decade in Seychelles, the 2002 Seychelles GYTS shows a high prevalence of tobacco use and high exposure to SHS among students. This situation may predict increasing prevalence of smoking in the next adult generation and an increase in the future morbidity and mortality attributable to tobacco. Evidence for high direct and indirect exposure to cigarette smoke, high recall rate of tobacco advertising, easy purchase of cigarettes in shops by under-aged, and substantial proportion of youth not recalling of being taught about of tobacco hazards underlie the need to strengthen effective comprehensive tobacco control programs and policy. This includes tighter enforcement of existing laws (e.g. ban of sale of tobacco products to minors); development of new regulations to ban smoking in public places; extension of the ban of all tobacco advertising and promotion to trans-boarder sources of advertising (e.g. ban on journals carrying tobacco advertising); increase of taxes on tobacco products; better information to consumers through mandatory disclosure of cigarette contents and larger health warnings on cigarettes boxes, including pictures; and strengthening of health education programs in schools and through the mass media. Provided it is performed at regular intervals, the GYTS (and similar surveys in adults) can be a powerful tool for monitoring the situation of tobacco control, for highlighting the need for new policy and programs, and for evaluating the impact of current and future tobacco control programs and policy (Jha and Chaloupka, 2000; Ranney et al., 2006).

Conflict of interest

The authors have no conflict of interest to declare.

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