Patterns of tobacco use: results from the 2005 Global Youth Tobacco Survey in Lebanon

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أنماط تعاطي التبغ: نتائج مستمدَّة من المسح العالمي المعني بالشباب والتبغ 2005 في لبنان

جورج سعادة، سيمون أبو جودة، ريما عفيفي، شارلز وورن، نيثان جونز

الخلاصة: يعرض الباحثون نتائج المسح العالمي المعني بالشباب والتبغ، الذي أجري في لبنان عام 2005 لاستقصاء المواقف والسلوكيات الذاتية الإبلاغ، ذات الصلة بالتبغ، وذلك بين 3314 طالباً من طلاب المدارس اللبنانيين الذين تتراوح أعمارهم بين 13 – 15 عاماً. وقد بلغ المعدَّل الحالي لتعاطي منتجات التبغ بأنواعها 60.1%، وبلغ معدَّل تدخين السجائر 10٪ ومنتجات التبغ الأخرى 59٪، ومثَّل الذكور النسبة الغالبة بين المتعاطين في كل أشكال التعاطي. وتبين أن 80٪ من الطلاب يعيشون في بيوت يدخن بها آخرون، كما يرغب نحو 60٪ ممن يدخنون حالياً في الإقلاع عن التدخين. وتبين أيضاً أن 51٪ من جميع الطلاب قد تلقوا دروساً في الفصول الدراسية عن حالياً التبغ: ويعتقد أكثر من ربع الطلاب (27٪) أن لدى المدخنين من الفتيان أصدقاء أكثر، كما يعتقد 17٪ من هؤلاء الطلاب أن التدخين يجعل الفتيان أكثر جاذبية. وقد اطلع معظم الطلاب على كلا النوعين من الرسائل الإعلامية سواء المناهضة للتدخين أو المشجعة عليه.

ABSTRACT We report the results of the 2005 Global Youth Tobacco Survey in Lebanon which investigated the self-reported attitudes and behaviours related to tobacco among 3314 Lebanese school-children aged 13–15 years. Current use of any tobacco product was 60.1%; the use of cigarettes was 10% and other tobacco products 59% with male predominance in all areas. About 80% of students lived in homes where others smoked. About 60% of current smokers wanted to quit smoking and 51% of all students had learned about the effects of tobacco in class. Over a quarter (27%) thought that boys who smoke have more friends and 17% believed that smoking makes boys more attractive. The majority of students had been exposed to both anti-smoking media messages and pro-smoking advertisements.

Tendances en matière de consommation de tabac : les résultats de l'enquête mondiale de 2005 sur le tabagisme chez les jeunes au Liban

RÉSUMÉ Nous présentons les résultats de l'enquête mondiale de 2005 sur le tabagisme chez les jeunes qui a été menée au Liban et qui a permis d'étudier les attitudes et les comportements liés au tabac de 3314 jeunes libanais scolarisés âgés de 13 à 15 ans, sur la base de leurs propres déclarations. La proportion de jeunes consommant du tabac sous toutes ses formes était alors de 60,1 %; la consommation de cigarettes représentait 10 % et celle des autres produits du tabac 59 %, avec une prédominance masculine dans tous les domaines. Près de 80 % de ces jeunes vivaient avec des fumeurs. Environ 60 % des fumeurs souhaitaient arrêter de fumer et 51 % de l'ensemble des élèves avaient été informés des effets du tabac en classe. Plus du quart (27 %) pensaient que les garçons qui fument ont plus d'amis et 17 % que le fait de fumer rend ces garçons plus attirants. La majorité des élèves avaient été exposés à des messages contre le tabac diffusés par les médias et à des publicités pour le tabac.

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Introduction

Tobacco use is the number one preventable cause of death in the world. Tobacco consumption is responsible for more than 4 million deaths each year [1]. Although there has been a substantial reduction in smoking prevalence in the past few years in some parts of the world, tobacco remains popular among adolescents and young adults in the United States who start smoking at an early stage in life [2]. There is strong evidence that indicates that the duration of smoking and the amount of smoking affects the severity of health problems. Also, the younger one starts to smoke, the more likely one is to remain a smoker in adulthood [3].

Smoking is highly prevalent among youth in Lebanon. A survey of students entering university in 1998 indicated that 67.5% of males and 62.9% of females had ever tried cigarettes [4]. In 2001, another survey of a larger sample of universities indicated that more males (61.7%) than females (41.9%) smoked cigarettes [5]. Smoking the water pipe (*narghile*) seems to be on the rise among university students: 43% of students entering university in 2002 reported ever use [6], compared to 30% 4 years before [4]. Females were 0.457 times less likely to currently use *narghile* [6].

The Global Youth Tobacco Survey (GYTS) was developed through the Tobacco Free Initiative by the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO). It is a school-based survey of students aged 13–15 years, and was conducted in 2001 and 2005 in Lebanon. In GYTS 2001, approximately 5.3% of girls and 10.4% of boys reported currently smoking cigarettes and 33.9% of girls and 45.0% of boys currently using other forms of tobacco, mainly narghile [7].

This paper presents the results of GYTS 2005 that was implemented in Lebanon from March 2005 to May 2005.

Methods

Sample selection

The GYTS is a school-based survey of students aged 13-15 years. However, in order to capture this age group, classes which were most likely to include 13-15-year-olds were selected as the basic unit of selection. All schools with 40 or more students which included grades 7, 8 and 9 comprised the sampling frame. The school list was obtained from the Ministry of Education and included all schools in the country with the above-mentioned restrictions. A 2-stage cluster sample design was used to select a representative sample of schools for Lebanon. This sample included 50 schools (25 private and 25 public). Schools were selected with probability proportional to enrolment size and classes were randomly selected. All students in the selected classes were eligible to participate; this resulted in some students being outside the 13-15 year age range.

GYTS questionnaire

The questionnaire is self-administered consisting of 2 sets of questions. The first set includes "core" questions that are used by all countries unless the information is not relevant to the country. This set of questions allows the comparison of results between countries. The second set includes optional questions that countries may or may not use according to their needs and priorities. The GYTS questionnaire used in our study included data on the prevalence of cigarette and other tobacco use, perceptions and attitudes concerning tobacco use, cessation, in-

formation on access, availability and price, environmental tobacco smoke exposure, school curriculum, and media and advertising (available on request). It consisted of 61 multiple choice questions that were pre-tested with students of similar ages in Lebanon before GYTS was administered in schools.

Data collection

In order to ensure that the survey follows the same procedures in all countries, survey coordinators from countries were trained at a regional workshop to conduct the GYTS. The trained survey coordinator from Lebanon trained 10 administrators in the country on the protocols and procedures of GYTS. Moreover, the coordinator assigned the administrators to schools and followed their work. The coordinator was responsible for the final editing and cleaning of data and sending the data with all related forms to CDC where the data from all countries were analysed.

The 2005 Lebanon GYTS had a school response rate of 98.0%, a student response rate of 99.2%, and an overall response rate of 97.2%. A total of 3314 students participated in the GYTS.

Data analysis

A weighting factor was 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, class and student levels. A final adjustment summed the weights by grade and gender to the population of schoolchildren 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 [8]. A *P*-value < 0.05 was considered statistically significant.

Results

In the GYTS – Lebanon, 2005, 3314 students participated, 75% of whom were between 13 and 15 years, $12\% \le 12$ years and $13\% \ge 16$ years; 1867 (56.3%) were girls.

Tobacco use

Table 1 indicates the rates of tobacco use. Almost 3 in 10 students (27.0%) reported that they had ever smoked a cigarette, with the rate for boys (36.9%) significantly higher than girls (20.1%). The majority of students (60.1%) reported currently using some form of tobacco, with 10.0% currently smoking cigarettes and 58.8% currently using some other forms of tobacco. Use of other tobacco products was significantly higher than cigarette smoking for both boys and girls. The frequency of current cigarette smoking in boys (14.8%) was more than twice that of girls (6.7%). Significantly more boys (64.1%) smoked other tobacco products than girls (54.7%), although over half of girls currently used other tobacco products. Over half the students (55.1%) reported that they had ever tried narghile, with no statistical differences between boys and girls. The most common places to smoke narghile were at home, at a friend's house or during social events. Both boys and girls were most likely to smoke at home. The only significant difference between genders was smoking during social events (boys were significantly more likely than girls to do this) (data not shown).

Among never smokers, 2 in 10 indicated that they were susceptible to start smoking in the next year. There was no significant difference in susceptibility between boys and girls. The proportion of never smoker girls who were susceptible (18.9%) was 2.8 times greater than the proportion of girls who currently smoked cigarettes (6.7%).

Table 1 Prevalence of tobacco use among Lebanese schoolchildren			
Variable	Males (n = 1391) % (95% CI)	Females (n = 1867) % (95% CI)	Total (n = 3314) % (95% CI)
Ever smoked cigarettes (even 1 or 2 puffs)	36.9 (30.7–43.5)	20.1 (17.6–22.9)	27.0 (23.8–30.6)
Ever tried to smoke narghile	60.2 (54.3–65.9)	51.3 (47.4–55.3)	55.1 (51.3–58.8)
Never smokers susceptible to initiating smoking ^a	22.6 (18.6–27.3)	18.9 (16.2–22.0)	20.3 (17.6–23.2)
Current use Any tobacco product Cigarettes Other tobacco products	66.4 (60.5–71.9) 14.8 (11.4–19.0) 64.1 (58.6–69.4)	55.4 (52.2–58.6) 6.7 (5.2–8.6) 54.7 (51.5–57.8)	60.1 ^b (56.8–63.3) 10.0 ^b (8.3–12.0) 58.8 ^b (55.5–62.0)
Current smokers Desire to stop Tried to stop this year	62.2 (52.1–71.4) 56.9 (45.7–67.5)	57.0 (45.4–67.9) 45.9 (34.0–58.2)	60.2 (52.7–67.3) 53.6 (44.9–62.0)

^aSusceptibility defined as the absence of a firm decision not to smoke [9].

The majority of cigarette smokers (60.2%) would like to stop smoking now and 53.6% had tried to stop smoking in the past year but failed. There was no statistical difference in the desire to stop smoking or attempts to stop in the last year between boys and girls.

School curriculum

Half of the students (50.8%) reported that during the past year they had been taught in class about the dangers of smoking. A large proportion (39.0%) stated they had discussed in class reasons why people their age smoke (Table 2).

Attitudes to smoking

Attitudes are an important determinant of behaviour. Several attitudinal questions related to smoking were asked of students. Overall, 27.0% of students thought that boys who smoke have more friends, 17.6% thought that girls who smoke have more friends (data not shown). When categorized by smoking status, more current smokers than never-smokers thought that boys and girls who smoke have more friends, but this difference was not statistically significant. In addition, 16.6% of the students surveyed thought that smoking makes boys look more attractive, and 10.2% believed that smoking

Table 2 Coverage of tobacco issues in the school curriculum			
Issues addressed in school	Males (n =1391) % (95% CI)	Females (n = 1867) % (95% CI)	Total (n = 3314) % (95% CI)
Dangers of smoking	52.0 (43.0–60.9)	49.9 (42.3–57.4)	50.8 (43.7–57.7)
Reasons why people their age smoke	39.0 (32.2–46.2)	38.7 (32.3–45.4)	39.0 (33.3–44.9)

CI = confidence interval.

^bPercentage of the total number of students.

CI = confidence interval.

makes girls look more attractive (data not shown). A significantly greater proportion of current smokers than never smokers thought that boys who smoke look more attractive (32.1% versus 14.1%) and that girls who smoke look more attractive (20.1% versus 8.7%) (Table 3).

Male and female never smokers and current smokers had different attitudes towards smoking. However, the only significant difference was the belief among male and female never smokers that smoking made girls more attractive: only 5.7% of female nonsmokers agreed with this statement as opposed to 13.9% of male nonsmokers.

Access and availability

Students who currently smoked were asked where they usually smoked, where they purchased their cigarettes, and if anyone had ever refused to sell them cigarettes based on their age. Of the current smokers, 29.8% usually smoke at home, with girls smokers (48.9%) being significantly more likely to

smoke at home than boy smokers (18.2%). About a fourth had purchased cigarettes from a store, with boys being significantly more likely to have done so than girls (32.5% versus 12.2%). The vast majority of those who bought cigarettes from stores (86.5%) had never been refused them due to their age (Table 4).

Environmental tobacco smoke exposure

Exposure to environmental tobacco smoke was very high for all students in their homes and in public places. Overall, 79.0% of the students stated that they lived in homes where others smoke in their presence, and 68.6% stated that they have 1 or more parent who smokes. In addition, 75.0% stated that they are around others who smoke in places outside their home (data not shown). When categorized by smoking status, significantly more current smokers than never smokers were exposed to smoke both at home (92.1% versus 77.1%) and in other places

Table 3 Attitudes towards tobacco use among Lebanese schoolchildren				
Attitude	Males % (95% CI)	Females % (95% CI)	Total % (95% CI)	
Think boys who smoke have more friends				
Never smokers ($n = 2337$)	22.9 (19.5-26.7)	28.0 (24.9-31.5)	26.3 (23.7-29.0)	
Current smokers ($n = 311$)	28.6 (21.5–37.0)	31.9 (21.9-43.9)	30.1 (24.0–36.9)	
Think girls who smoke have more friends				
Never smokers ($n = 2348$)	18.0 (15.8-20.4)	15.5 (13.5-17.8)	16.5 (14.7–18.5)	
Current smokers ($n = 321$)	23.6 (17.7–30.7)	18.0 (12.4–25.3)	21.6 (17.0–27.1)	
Think smoking makes boys look more attractive				
Never smokers ($n = 2364$)	16.6 (13.9-19.7)	12.4 (9.8-15.6)	14.1 (11.6–16.9)	
Current smokers ($n = 315$)	29.1 (21.1–38.7)	36.6 (29.6-44.2)	32.1 (26.6–38.2)	
Think smoking makes girls look more attractive				
Never smokers ($n = 2366$)	13.9 (11.1-17.2)	5.7 (4.2-7.7)	8.7 (6.8-11.1)	
Current smokers ($n = 312$)	18.7 (11.8–28.2)	22.3 (14.6–32.5)	20.1 (14.3–27.5)	
CI = confidence interval.				

Table 4 Access to and availability of tobacco products for current smokers			
Variable	Males (n = 190) % (95% CI)	Females (n = 115) % (95% CI)	Total (n = 310) % (95% CI)
Usually smoke at home	18.2 (13.8–23.7)	48.9 (38.9–59.0)	29.8 (22.1–38.9)
Purchased cigarettes in a store	32.5 (25.0–41.0)	12.2 (8.9–16.6)	24.5 (19.3–30.6)
Bought cigarettes in a store and were not refused because of			
their age	85.7 (71.1–93.6)	88.8 (62.4–97.4)	86.5 (74.0–93.5)

CI = confidence interval.

(90.2% versus 71.3%). The results were in the same direction and significant for boy and girl never smokers as compared to current smokers (Table 5)

Despite the high exposure to environmental tobacco smoke, 77.2% of the students thought that smoke from others is harmful to them (data not shown), with significantly fewer current smokers agreeing with this statement than never smokers (64.6% versus 78.9%) (Table 5).

The students had overwhelmingly positive attitudes towards tobacco control

policies: 85.0% thought smoking should be banned from public places (data not shown), although significantly fewer current smokers (61.9%) agreed with this statement than never smokers (87.7%) (Table 5).

Media and advertising

Over three-quarters (77.7%) of the students surveyed stated that they had seen antismoking media messages with no significant differences between never smokers and current smokers. However, to counteract these messages, 88.3% affirmed that they

Table 5 Environmental tobacco smoke exposure			
Variable	Males % (95% CI)	Females % (95% CI)	Total % (95% CI)
Exposed to smoke from others in their home			
Never smokers ($n = 2372$)	74.0 (70.4–77.4)	78.8 (75.0-82.1)	77.1 (73.7–80.1)
Current smokers $(n = 316)$	91.9 (86.9–95.1)	92.0 (84.1–96.2)	92.1 (87.6–95.0)
Exposed to smoke from others in public places Never smokers (n = 2370)	69.5 (66.7–72.1)	72.2 (68.8–75.4)	71.3 (68.6–73.9)
Current smokers $(n = 314)$	91.4 (85.3–95.1)	88.6 (81.1–93.3)	90.2 (85.2–93.6)
Think smoking should be banned from public places			
Never smokers ($n = 2383$)	85.4 (82.7-87.8)	89.1 (85.9-91.6)	87.7 (85.2-89.9)
Current smokers ($n = 309$)	61.7 (54.6-68.3)	61.7 (54.1–68.7)	61.9 (57.2–66.5)
Think smoke from others is harmful to them			
Never smokers ($n = 2369$)	79.1 (74.1-83.3)	78.8 (75.0-82.3)	78.9 (74.9-82.4)
Current smokers $(n = 314)$	63.1 (54.1–71.2)	68.1 (61.4–74.1)	64.6 (57.1–71.5)

CI = confidence interval.

had seen pro-cigarette advertisements on billboards, and 79.2% had seen pro-cigarette advertisements in newspapers or magazines (data not shown) with no significant differences in the latter between never smokers and current smokers. In addition, 19.0% of the students acknowledged that they possessed an object with a cigarette brand logo on it, with significantly fewer never smokers reporting that they owned such an object than current smokers (17.0% versus 24.2%). Finally, 11.2% of the students had been offered free cigarettes by a tobacco company representative, with significantly more current smokers having been offered these cigarettes than never smokers (21.6% versus 9.3%) (Table 6).

Discussion

CI = confidence interval.

Information on tobacco use among adolescents is limited in Lebanon. GYTS was first implemented in Lebanon in 2001 [10] and was repeated in 2005. It was launched to create a baseline that can help in measuring

trends in tobacco use among young people, and to provide information for intervention development and evaluation.

Although the rates of ever cigarette use overall and among boys and girls in the current sample remains high (27% overall, boys 36.9%, girls 20.1%), it has decreased since the 2001 survey (32.6% overall, boys 39.9%, girls 27.1%). In general, the prevalence of students who ever smoked cigarettes and currently smoke cigarettes has decreased over the 4 years.

However, the prevalence of students who currently smoke other tobacco products (cigar, pipe and *narghile*) has increased since 2001. In the current sample, about 60% of students reported smoking a product other than cigarettes (boys 64.1%, girls 54.7%). This is an alarming rate of use of other tobacco products and a major public health issue for Lebanon that urgently needs intervention. In 2001, this percentage was 43.8% (boys 51.0%, girls 38.2%). This is especially relevant as the age group of the 2005 sample is slightly younger than the

Table 6 Exposure to media information against smoking and to tobacco company advertising Exposure Males Females Total			
Exposure	% (95% CI)	% (95% CI)	% (95% CI)
Saw anti-smoking media messages	75.8 (72.0–79.3)	78.8 (75.7–81.7)	77.7 (75.0–80.2)
Saw tobacco advertisements in newspapers and magazines			
Never smokers ($n = 2367$)	78.6 (75.7-81.3)	79.5 (76.3-82.3)	79.0 (76.6-81.3)
Current smokers (n = 316)	76.8 (70.4–82.2)	76.1 (67.2–83.2)	76.8 (71.4–81.5)
Possess an object with a cigarette brand logo on it			
Never smokers ($n = 2369$)	21.7 (18.7-25.1)	14.3 (12.5-16.4)	17.0 (15.4–18.7)
Current smokers (n = 301)	28.8 (19.6–40.2)	17.4 (9.7–29.4)	24.2 (19.1–30.0)
Offered free cigarettes by a tobacco			
company representative			
Never smokers ($n = 2330$)	11.4 (8.6-15.0)	8.1 (6.7-9.7)	9.3 (7.9-10.9)
Current smokers ($n = 304$)	25.6 (21.6-30.0)	16.1 (8.2-29.1)	21.6 (17.9-25.8)

2001 cohort. The increase is most likely due to the increase in the use of *narghile* which has re-emerged in Lebanese society, partially because of the misconception that *narghile* is not as harmful as cigarettes. Indeed, parents are known to share the *narghile* habit with their children [11].

More boys reported smoking all types of tobacco than girls, but the gap was narrower in relation to products other than cigarettes. Twice as many girls were susceptible to smoking than currently smoked, which may be an indicator that cigarette smoking for girls may increase in the near future. This calls for renewed efforts of national antismoking campaigns.

The rest of the survey questions focused on cigarette smoking only. Indicative of their attitudes towards tobacco smoke, most current smokers stated that they would like to quit and many had tried to quit in the last year. Their failure to do so suggests that research is needed to investigate the contextual factors that make cessation particularly difficult for adolescents, and interventions to facilitate quitting must be developed.

Only half of the students indicated that they had heard of the dangers of tobacco smoke in school, and fewer had discussed the reasons why people begin to smoke. The K-12 Lebanese national curriculum includes objectives related to tobacco awareness raising. Exposure of students to the dangers of smoking in the curriculum should be 100%. Thus, these data indicate serious flaws in implementation of this part of the curriculum, possibly due to the smoking status of teachers themselves.

Indicative of the lack of awareness of issues related to tobacco use, around a third of current smokers believed that boys who smoke are more attractive or have more friends, and about a fifth thought that girls who smoke are more attractive or have

more friends. These percentages are quite high and are subtle indicators of suggestive media messages. Fewer never smokers had these attitudes, but even so about a quarter of never smokers thought that smoking boys have more friends. Intervention programmes that build social inoculation skills should be developed and implemented to ensure that current never smokers remain so. Media literacy programmes to help young people appraise media messages critically can also be encouraged.

The results on places of smoking were interesting. Almost half the girls reported smoking at home, perhaps suggesting that their parents actually know that they smoke, or that they are addicted enough to take the risk of being found out at home. Fewer boys smoke at home. The vast majority of students who smoked had never been refused the purchase of cigarettes because of their age. This is not surprising as Lebanon does not have an age limit on the purchase of cigarettes.

The context of tobacco use in Lebanon is clearly shown by the environmental tobacco exposure results. Young people are surrounded by tobacco use in their immediate environment, at home and in other public places. Because of the high rates of environmental exposure overall, current smokers are even more exposed. The influence of the social environment is here reinforced. Intervention programmes cannot be limited to young persons, but must also target their social environments and tackle control as well as prevention.

Finally, the vast majority of adolescents reported having seen both an anti-smoking and pro-smoking messages in the media. Neither alone seems to be influential as current smokers and never smokers were equally likely to state they had seen both types of messages. However, in combina-

tion with other influences, parental and peer, the media contributes to an overall environment that favours smoking over nonsmoking. Controlling media and advertising of tobacco products should be a national priority.

The findings in this report are subject to several limitations. GYTS is administered to students in school and thus the results are not generalizable to those who do not attend schools or who attend technical schools. Only public and private schools that had at least 40 enrolled students were included in the sampling frame, and thus data may not be generalizable to students in non-fee paying private schools that are subsidized by certain groups, such as religious organizations, or in schools that have fewer than 40 students. Data are based on self-reports and therefore are subject to the biases inherent in this kind of methodology. However, research suggests that self-report is a relatively accurate measure of smoking behaviour for this age group [12-14]. Finally, the study is based on a cross-sectional design

and therefore any associations seen cannot be taken to indicate causation.

Comprehensive tobacco prevention programmes for adolescents are urgently needed to stem the increasing use of tobacco. These programmes must be multi-level in nature and target adolescents as well as the varied influences on their behaviour. Policies should be implemented to protect young people from tobacco smoke and tobacco advertising, and ensure that education about the dangers of smoking and skills to resist peer pressure to smoke are actually provided in the school curriculum. Lebanon has recently ratified the WHO Framework Convention on Tobacco Control, perhaps signaling a new hope for Lebanese youth.

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References

- Murray CGL, Lopez AD. Alternative projections of mortality and disease by cause, 1990–2020: global burden of disease study. *Lancet*, 1997, 349:1498–504.
- Smoking attributable mortality years of potential life lost, United States, 1984. Morbidity and mortality weekly report, 1997, 46:448–51.
- Preventing tobacco use among young people: a report of the Surgeon General. Morbidity and mortality weekly report, 1994, 43(RR-4):1-10.
- Shediac-Rizkallah M et al. Adolescent health-related behaviors in postwar Lebanon: findings among students at the American University of Beirut. *Interna*tional quarterly of community health education, 2001, 20:115–31.

- Tamim H, Musharrafieh U, Almawi W. Smoking among adolescents in a developing country. Australian and New Zealand journal of public health, 2001, 25:18–9.
- Chaaya M et al. Argileh smoking among university students: a new tobacco epidemic. Nicotine & tobacco research, 2004, 6(3):457–63.
- Global Youth Tobacco Survey Collaborating Group. Differences in worldwide tobacco use by gender: Findings from the Global Youth Tobacco Survey. *Journal of* school health, 2003, 73(6):207–15.
- 8. Shah BV, Barnell BG, Bieler GS. SUDAAN: Software for the statistical analysis of correlated data: User's manual. Release 7.5.

- Research Triangle Park, NC, Research Triangle Institute, 1997.
- Pierce JP et al. Validation of susceptibility as a predictor of which adolescents take up smoking in the United States. *Health* psychology, 1996, 15(5):355–61.
- Trends in tobacco use among school students in the Eastern Mediterranean Region. Cairo, World Health Organization, Regional Office for the Eastern Mediterranean, 2007 (WHO-EM/TFI/044/E).
- 11. Maziak W et al. Tobacco smoking using a waterpipe: a re-emerging strain in a global epidemic. *Tobacco control*, 2004, 13(4):327–33.

- Hurd PD et al. Prevention of cigarette smoking in seventh grade students. Journal of behavioral medicine, 1980, 3(1):15–28.
- 13. Wills TA, Cleary SD. The validity of self-reports of smoking: analyses by race/ethnicity in a school sample of urban adolescents. *American journal of public health*, 1997, 87(1):56–61.
- Dolcini MM et al. An assessment of the validity of adolescent self-reported smoking using three biological indicators. *Nicotine & tobacco research*, 2003, 5(4):473–83.

The 14th World Conference on Tobacco or Health

The 14th World Conference on Tobacco or Health is scheduled to take place in Mumbai, India on 8-11 March 2009. The theme is Global Tobacco Control: multi-sectoral approach to tobacco control: polices, pathways, partners and people.

The conference provides an opportunity to interact with a diverse assemblage of tobacco control advocates from around the globe. The aim is to advance tobacco control in both developing and developed countries, to generate interest and greater involvement of stakeholders, and to provide a global perspective on tobacco control issues.

WHO has a crucial role in promoting tobacco control and intends to continue to provide policy and regulatory policies to all Member States. As a Technical Sponsor for the 14th World Conference on Tobacco or Health, WHO will serve in a role that actively facilitates discussion and implementation of successful tobacco control strategies. More information can be found by visiting the conference website at: http://www.14wctoh.org