

global youth tobacco survey

Country reports

The World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC), Atlanta, developed the Global Youth Tobacco Survey to track tobacco use among youth across countries using a common methodology and core questionnaire. Information from the Survey is compiled within the participating country by a Research Coordinator nominated by the Ministry of Health, and technically reviewed by WHO and CDC. The content has not otherwise been edited by WHO or CDC.

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**World Health
Organization**

Regional Office for the Eastern Mediterranean



Tobacco Use, Exposure to Secondhand Smoke, among school students: Sudan, Data from the Global Youth Tobacco Survey (GYTS), 2009

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Introduction:

Tobacco use is one of the major preventable causes of premature death and disease in the world [1]. A disproportionate share of the global tobacco burden falls on developing countries, where 84% of 1.3 billion current smokers reside [1]. The World Health Organization (WHO) attributes approximately 5 million deaths a year to tobacco. The number is expected to exceed 8 million deaths by 2030, with approximately 70% of these deaths occurring in developing countries [2]. Partly because of growth in the adult population, and partly because of increased consumption, the total number of smokers is expected to reach about 1.6 billion by 2025.

Recent trends indicate raising smoking prevalence rates among children and adolescent and earlier ages of initiation, if these patterns continue, tobacco use will result in deaths of 250 million children and adolescents alive today, many of them in developing countries.

The WHO, United Nations Children Fund (UNICEF), the Office on Smoking and Health (OSH), Center for Disease Control and prevention (CDC) established international programmes and initiatives in order to combat tobacco use. Because four out of every five persons who use tobacco begin before they reach adulthood, primary prevention strategies should be directed toward children and young adult (3).

In Sudan, 20.3% currently use any tobacco product; 8% currently smoke cigarettes (4).

Tobacco control programme in Federal ministry of health has been the instrumental laying the foundation for tobacco control in Sudan with the following being some of its main achievements:

- Sudan National Tobacco control law 2005 and modified tobacco control law 2008.

- National steering committee was Formulated 2008 to advocate tobacco control in Sudan.
- Obtaining smoking ban in all health institutions
- Banning smoking in public transportation.
- Declared Khartoum International Airport smoking free area 2007.
- Working with Community Based Organizations in awareness rising about the tobacco control issues.
- Corporation in conduction the new trend in label warnings for tobacco products.
- Conduction of tobacco prevention and control trends in Sudan, collaboration with national assembly.
- Celebration the no tobacco day yearly.

Concerning GYTS two rounds were conducted in Sudan; the GYTS 2001 and GYTS 2005, and the result of both surveys showed boys dominant on female in tobacco use.

Smoking prevalence among youth in Sudan 2001 was 20.3 for males and 12.9 for females and the over all smoking g prevalence was 20.3.

Sudan-GYTS is a national survey which aims to monitor trends of tobacco use among young people in Sudan periodically. It addresses certain variables including knowledge and attitudes of young people towards cigarette smoking, prevalence of cigarette smoking and other tobacco use among young people, role of the media and advertising in young people's use of cigarettes. Also the questionnaire includes information on the access to cigarettes, tobacco-related school curriculum, environmental tobacco smoke (ETS) and cessation of cigarette smoke.

Objectives of Sudan GYTS:

General objective:

To provide accurate information on school age population's health behaviors and tobacco use as a risk factors in Khartoum state.

Specific objectives:

- 1- To provide policy makers and health managers with the needed accurate information for mobilizing the resources for tobacco control activities among youth.
- 2- To establish trends in the prevalence of tobacco use and protective factors for the young people in Sudan.
- 3- To allow international agencies and the country to make comparisons across countries on the prevalence of tobacco use and protective factors.
- 4- To determine the behavior change between two surveys so as to know the efficacy of health education programs among the last period.

The GYTS also addresses the following issues, which could be used to monitor the implementation of Sudan National law for tobacco control 2005 as well as the implementation of the Framework Convention on Tobacco FCTC;

- Determine the level of tobacco use
- Estimate the age of initiation of tobacco use
- Estimate the level of susceptibility to become a tobacco smoker
- Estimate the exposure to tobacco advertisement
- Identify key intervening variables such as attitudes, beliefs and norms regarding the tobacco use among students, which can be used in tobacco prevention programs
- Assess the extent to which major prevention programs are reaching school based population and establish the subjective opinions of these population regarding such interventions.

Methodology:

The GYTS school-based cross sectional surveys employ two-stage cluster sampling design to produce a nationally representative sample of students in grades 8th in basic and 1st and 2nd in secondary schools in both governmental and private schools within Khartoum State the capital of Sudan.

Sample description:

School Level - The first-stage sampling frame consisted of all schools containing grades 8 basic, 1st secondary, and 2nd secondary. Schools were selected with probability proportional to school enrollment size. This meant that large schools (with more students) were more likely to be selected.

Class Level - The second sampling stage consisted of systematic equal probability sampling (with a random start) of classes from each school that participated in the survey. All classes in the selected schools were included in the sampling frame. All students in the selected classes were eligible to participate in the survey.

WEIGHTING:

A weight has been associated with each questionnaire to reflect the likelihood of sampling each student and to reduce bias by compensating for differing patterns of nonresponsive. The weight used for estimation is given by:

$$W = W1 * W2 * f1 * f2 * f3 * f4$$

W1 = the inverse of the probability of selecting the school

W2 = the inverse of the probability of selecting the classroom within the school

f1 = a school-level non response adjustment factor calculated by school size category (small, medium, large).

f2= a class adjustment factor calculated by school

f3 = a student-level non response adjustment factor calculated by class

f4 = a post stratification adjustment factor calculated by gender and grade

USE OF THE WEIGHTED RESULTS:

The weighted results can be used to make important inferences concerning tobacco use risk behaviors of students in Sudan in grades 8, 1st secondary, and 2nd secondary.

Data collection:

The survey coordinator was nominated by the FMOH and was trained in the regional training workshop conducted in Cairo during the June 2008 which included groups of EMRO countries that will conduct the 3rd round of the survey. This was meant to ensure that the GYTS protocol and procedures for administration would be identical across the countries. Survey procedures were designed to protect the students' privacy by allowing for anonymous and voluntary participation.

The preparatory phase for the Sudan GYTS 2009 started in July 2008 in Khartoum state. Certain steps and measures have taken place since then. The steps included formulation of a survey technical committee .This was followed by selection of the survey team from staff from Federal Ministry of Health, Khartoum State Ministry of Health, Ministry of General Education, and Khartoum State Ministry of Education.

The technical committee reviewed the questionnaires and decided to add 4 questions on Toombak use to the core questionnaire, since it is a common practice in Sudan context and information on its use among youth is needed.

Training of survey teams was conducted by the survey coordinator assisted by the technical committee members, where the methodology and the survey field steps were thoroughly discussed and agreed upon. Questionnaires were also reviewed and details of the expected queries in the field were addressed.

Field work started in the 1st week of February, where schools have been visited and students have been able to complete the self-administered questionnaire in their classrooms, recording their responses directly on the machine-readable answer sheet.

Results:

A total of 950 students aged 13-15 participated in the Sudan GYTS. The school response rate was 100.0% 25 of the 25 sampled schools participated, the classes response rate was 100.0 43 of the 43 sampled classes participated, the student response rate was 88.8% 1,923 of the 2,165 sampled students completed usable questionnaires and the overall response rate was $100.0\% * 100.0\% * 88.8\% = 88.8\%$.

Table 1:

Students who had ever smoked cigarettes, percent of students who ever smoked that first tried a cigarette before age 10, and percent of students who had never smoked that were susceptible to start smoking in the next year.

State	Ever smoked cigarettes, even one or two puffs	Ever smokers who initiated smoking before age 10	Percent never smokers likely to initiate smoking within a year
SUDAN	9.5 (6.2 - 14.1)	36.6 (23.5 - 52.0)	18.7 (15.2 - 22.9)
Boy	13.7 (8.7 - 20.7)	*	24.8 (21.0 - 29.0)
Girl	5.1 (3.4 - 7.8)	*	13.7 (9.8 - 18.8)

* Cell size is less than 35

Table (1) Shows that 9.5% of students had ever smoked cigarettes. Male's students (13.7%) were significantly more than female students (5.1%) who have had ever smoked cigarettes even one or two buffs. Over all (36.6%) of students who ever smokes have initiated smoking before age 10. Over all 18.7% of students who had never smoke are likely to initiate smoking within a year, and male students were significantly (24.8%) more likely to do so than female students (13.7%).

Table 2:

Percent of students who were current cigarette smokers and current users of tobacco products other than cigarettes.

State	Current cigarette smoker	Currently use other tobacco products	Current user of shisha
SUDAN	2.7 (1.7 - 4.4)	6.0 (4.3 - 8.3)	6.0 (4.3 - 8.3)
Boy	3.4 (2.2 - 5.2)	7.7 (5.7 - 10.3)	7.7 (5.7 - 10.3)
Girl	1.6 (0.8 - 3.2)	3.5 (2.6 - 4.7)	3.5 (2.6 - 4.7)

* Cell size is less than 35

Table 2 shows approximately 2.7% of students were current cigarette smoker, with obvious gender differences. Over all 6% of students were currently use other tobacco products, male students (7.7%) were significantly more than female students (3.5%). Over all 6% of students currently use shisha. 7. % of male students were current user of shisha and they are significantly more than female students as current user of shisha, gender effect.

Table 3:

Percent of students exposed to smoke at home, exposed to smoke in public, and supported banning smoking in public places.

State	Percent exposed to smoke from others at home	Percent exposed to smoke from others in public places	Percent who think smoking should be banned in public places
SUDAN	27.6 (24.2 - 31.3)	33.1 (29.3 - 37.0)	82.1 (77.8 - 85.7)

Boy	26.0 (21.2 - 31.5)	33.3 (27.8 - 39.4)	78.0 (71.6 - 83.3)
Girl	28.7 (24.0 - 34.0)	32.0 (27.4 - 37.0)	86.7 (82.2 - 90.2)

Table (3) Shows about 27.6% of all students exposed to smoke from others at home and 33.1% of students exposed to smoke from others in public places with no gender differences. Over all, 82.1% of students think smoking should be banned in public places.

Table 4:

Percent of students who were taught dangers of smoking, discussed reasons why people their age use tobacco, taught effects of using tobacco.

State	Percent taught dangers of smoking tobacco	Percent discussed reasons why people their age smoke tobacco
SUDAN	34.8 (30.3 - 39.6)	26.6 (24.1 - 29.1)
Boy	33.4 (27.7 - 39.7)	27.2 (23.4 - 31.4)
Girl	36.2 (29.6 - 43.3)	25.8 (21.8 - 30.2)

Table (4) shows that only 34.8% of students were taught dangers of smoking tobacco and 26.6% of students were discussed reasons why people their age smoke tobacco. There was no significant difference by gender.

Table 5:

Percent of students who saw ads on billboards, saw ads in newspapers, and had an object with a tobacco company logo on it.

State	Percent who saw ads for cigarettes on billboards in the past month	Percent who saw ads for cigarettes in newspapers or magazines in the past month	Percent who have an object with a cigarette or tobacco logo on it	Percent who have been offered "free" cigarettes by a tobacco company representative
SUDAN	63.9 (58.4 - 69.0)	50.6 (46.3 - 54.8)	11.8 (9.4 - 14.7)	7.9 (5.9 - 10.6)
Boy	67.5 (55.0 - 77.9)	48.2 (43.7 - 52.8)	14.1 (9.7 - 20.1)	8.9 (5.8 - 13.3)
Girl	61.3 (56.4 - 65.9)	52.6 (45.9 - 59.1)	9.7 (7.1 - 13.1)	6.1 (4.2 - 8.8)

Over all, 63.9% were saw ads for cigarettes on billboards in the past month and 11.8% had an object with tobacco logo on it. Over all 7.9% of the students were offered free cigarettes by a tobacco company representative with minor difference by gender in all.

Discussion:

The Global Youth Tobacco Survey in Sudan for 2009 is a third national school based survey, which was conducted among student in grades 8th basic and 1st and 2nd secondary schools (Annex).

Over all ever smoked cigarettes showed decrease from 17.1% in 2001 and 19.3% in 2005 to 9.5% in 2009 The percentage of ever Smokers, first smoked cigarettes before age 10 is slightly decreased compared to 2005(37.3% to 36.6%).The percentage of current cigarette smokers decreased from 6.1% in 2001 and 6% in 2005 to 2.7%, and this may indicates the tobacco use change from cigarettes smoking to other tobacco product such as shisha and tombak. The percentage of Current user of other tobacco products decreased from 13.5% in 2001 and 10.2% in 2005 to 6% in 2009. The percentage of never smokers likely to initiate smoking in the next year increased from 13.9% in 2005 to

18.7% this may relate to the emerging of new tobacco product such as shisha as a form of mode and due to availability and easy access (annex table 1).

The percentage of students whose one or more parents smoke has increased from 16.2% in 2005 to 19.9%. The percentage of students exposed to smoke in public places decreased from 40% 2001 and 40.4% in 2005 to 33.1% which remarkable decrease that can reduce the number of passive smokers among students. A positive attitude from students that 82.1% were in favor of banning smoking in public although it was slightly decreased than in year 2005 but it must be appreciated. Also the percentage of all or most best friends smoke has decreased by more than half than in year 2005 and was significant.

The percentage of students, who were taught in any classes about the dangers of smoking during this school year, was increased from 30% in 2001 to 34.8% with no significant difference by gender. It's of great value to include tobacco use and its dangerous effect in the school curriculum at a very young age as the survey data indicated that smoking is imitated at an early ages. The percent of students discussed reasons why people their age smoke tobacco was increased (26.6%) compared to 2005(21%) (Annex table 2).

Till now there is no comprehensive ban on tobacco advertisement in Sudan, the GYTS provides very strange evidence that a total ban on tobacco advertisement is needed. About two thirds of the students during the past month saw any advertisement for cigarettes on billboards in proportion to about more than half in 2001. Both GYTS rounds 2005 and 2009 showed that about half of students in the past month saw any advertisements or promotions for cigarettes in newspapers or magazines and this could explained by either the lack of regulation from the ministry of commerce and industry and /or that the tobacco companies pay no attention to what ever regulation imposed by this ministry and this highlights the need for a complete ban on any tobacco promotion. Three quarters of the students in the three rounds of GYTS in Sudan saw any anti-smoking media messages during the past month. About 1 in 10 of students has an object (t-shirt, pen, backpack, etc) with a cigarette brand logo on it

Recommendations:

From this survey, the increased use of Shisha, cigarettes and other tobacco products by young people has been shown and many recommendations can be drawn.

1. Awareness campaigns on the danger of tobacco use need to be intensified. There is need for regular education on the dangers' of tobacco.
2. Formulate public policies and enact legislations that regulate tax increases for tobacco products, as well as points of sales and distributions.
3. Children are likely to start smoking if they grow up in an environment where tobacco advertising is prolific, where smoking rates are high among adults (including those that serve as role models for young people), where tobacco products are cheap and easy accessible and where smoking is unrestricted in public places, the tobacco control policies need to take this into consideration.
Besides drafting such polices, their enforcement and public awareness need to be considered.

Annex

Table (1) shows the changes of the prevalence of smoking use in 2001, 2005 and 2009 surveys

Prevalence	2001			2005			2009		
	Total	Boy	Girl	Total	Boy	Girl	Total	Boy	Girl
Ever smoked cigarettes	17.1 (12.8 - 22.5)	25.6 (19.1 - 33.3)	9.5 (7.3 - 12.4)	19.3 (13.7 - 26.6)	26.5 (19.5 - 34.9)	12.6 (8.9 - 17.6)	9.5 (6.2 - 14.1)	13.7 (8.7 - 20.7)	5.1 (3.4 - 7.8)
Ever Smokers, first smoked cigarettes before age 10	28.8 (18.6 - 41.9)	23.5 (12.8 - 39.1)	44.2 (27.6 - 62.2)	37.3 (32.5 - 42.5)	32.6 (28.0 - 37.6)	49.3 (37.5 - 61.2)	36.6 (23.5 - 52.0)	*	*
Current cigarette smoker	6.1 (3.8 - 9.8)	10.8 (6.3 - 17.8)	1.9 (1.1 - 3.5)	6.0 (3.6 - 10.0)	10.2 (6.6 - 15.5)	2.1 (1.4 - 3.2)	2.7 (1.7 - 4.4)	3.4 (2.2 - 5.2)	1.6 (0.8 - 3.2)
Current user of other tobacco products	13.5 (11.2 - 16.2)	17.2 (13.9 - 21.0)	10.4 (8.0 - 13.5)	10.2 (8.0 - 12.9)	11.0 (7.8 - 15.4)	9.3 (7.0 - 12.2)	6.0 (4.3 - 8.3)	7.7 (5.7 - 10.3)	3.5 (2.6 - 4.7)
Never smokers likely to initiate	22.3 (19.3 - 25.6)	24.2 (19.8 - 29.3)	20.9 (16.9 - 25.6)	13.9 (10.5 - 18.3)	14.4 (12.4 - 16.7)	13.2 (8.4 - 20.3)	18.7 (15.2 - 22.9)	24.8 (21.0 - 29.0)	13.7 (9.8 - 18.8)

smoking in the next year									
Current user of shisha	NA	NA	NA	NA	NA	NA	6.0 (4.3 - 8.3)	7.7 (5.7 - 10.3)	3.5 (2.6 - 4.7)

* Cell size is less than 35

Table 2:

Factors influencing tobacco use – SUDAN 2001, 2005, and 2009 (13-15 Years ONLY)

Factors	2001			2005			2009		
	Total	Boy	Girl	Total	Boy	Girl	Total	Boy	Girl
EXPOSURE TO SMOKE									
One or more parents smoke	22.5 (19.6 - 25.7)	24.2 (18.7 - 30.8)	20.6 (17.6 - 24.0)	16.2 (13.3 - 19.6)	18.3 (16.4 - 20.4)	14.4 (9.8 - 20.6)	19.9 (15.8 - 24.8)	17.1 (13.1 - 22.0)	21.2 (14.6 - 29.8)
Exposed to smoke in public places	41.0 (37.6 - 44.4)	44.0 (38.5 - 49.6)	38.0 (35.2 - 40.9)	41.4 (35.4 - 47.6)	48.1 (38.4 - 57.9)	35.3 (27.8 - 43.6)	33.1 (29.3 - 37.0)	33.3 (27.8 - 39.4)	32.0 (27.4 - 37.0)
In favor of banning smoking in public places	78.0 (74.7 - 81.0)	77.4 (73.1 - 81.3)	79.0 (74.5 - 83.0)	83.8 (79.4 - 87.4)	84.0 (76.8 - 89.3)	83.5 (76.2 - 88.9)	82.1 (77.8 - 85.7)	78.0 (71.6 - 83.3)	86.7 (82.2 - 90.2)

All or most best friends smoke	4.6 (2.8 - 7.6)	6.0 (2.9 - 12.3)	3.0 (2.0 - 4.5)	7.8 (6.6 - 9.3)	8.2 (6.7 - 9.8)	7.2 (5.4 - 9.7)	3.1 (1.7 - 5.5)	4.4 (2.1 - 9.2)	1.4 (1.0 - 1.9)
SCHOOL									
During this school year, were taught in any classes about the dangers of smoking	30.0 (26.8 - 33.4)	28.9 (23.4 - 35.0)	31.0 (26.6 - 35.7)	31.6 (26.2 - 37.6)	34.4 (28.7 - 40.5)	29.5 (21.0 - 39.5)	34.8 (30.3 - 39.6)	33.4 (27.7 - 39.7)	36.2 (29.6 - 43.3)
Percent discussed reasons why people their age smoke tobacco	25.7 (22.6 - 29.1)	25.1 (19.5 - 31.6)	26.3 (22.5 - 30.5)	21.0 (16.8 - 26.0)	22.5 (16.0 - 30.6)	19.3 (13.8 - 26.4)	26.6 (24.1 - 29.1)	27.2 (23.4 - 31.4)	25.8 (21.8 - 30.2)
Percent taught about the effects of smoking tobacco	34.3 (30.2 - 38.8)	32.8 (26.6 - 39.5)	35.8 (30.1 - 42.0)	29.7 (23.4 - 37.0)	27.8 (19.9 - 37.5)	31.6 (21.5 - 43.7)	NA	NA	NA
MEDIA/ADVERTISING									
During the past month saw any advertisement for cigarettes on billboards	56.5 (54.0 - 58.9)	57.6 (53.8 - 61.2)	55.5 (51.8 - 59.1)	51.5 (48.5 - 54.5)	52.8 (48.3 - 57.3)	50.4 (47.0 - 53.8)	63.9 (58.4 - 69.0)	67.5 (55.0 - 77.9)	61.3 (56.4 - 65.9)
During the past month saw any advertisement	58.4 (54.9 - 61.8)	53.8 (48.0 - 59.5)	62.1 (57.9 - 66.1)	49.0 (44.7 - 53.2)	48.1 (43.3 - 52.8)	49.3 (42.0 - -)	50.6 (46.3 - -)	48.2 (43.7 - 52.8)	52.6 (45.9 - 59.1)

s or promotions for cigarettes in newspapers or magazines						56.5)	54.8)		
Have an object (t-shirt, pen, backpack, etc) with a cigarette brand logo on it	12.8 (10.9 - 15.0)	12.7 (9.7 - 16.4)	12.5 (10.7 - 14.6)	18.0 (16.4 - 19.8)	18.3 (15.2 - 21.7)	17.8 (16.4 - 19.4)	11.8 (9.4 - 14.7)	14.1 (9.7 - 20.1)	9.7 (7.1 - 13.1)
During the past month saw any anti-smoking media messages	75.1 (72.1 - 77.9)	75.1 (70.6 - 79.2)	74.8 (70.8 - 78.4)	76.5 (69.1 - 82.5)	76.6 (69.5 - 82.4)	76.2 (64.2 - 85.2)	76.5 (70.7 - 81.4)	74.8 (66.7 - 81.5)	77.7 (71.0 - 83.2)

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