

# **YOUTH TOBACCO USE IN MONGOLIA**

## **A COMPONENT OF THE GLOBAL YOUTH TOBACCO SURVEY 2004**

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## ABBREVIATIONS

AYAD	Australian Youth Ambassador for Development
CMHN	Center of Mental Health and Narcology
DMS	Directorate of Medical Services
GYTS	Global Youth Tobacco Survey
MOH	Ministry of Health
NCD	Non Communicable Diseases
HPD	Health Promotion Department
TFI	Tobacco Free Initiative
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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## INTRODUCTION

The World Health Organization (WHO) attributes over four million deaths annually to tobacco<sup>1</sup>. That figure could reach 10 million by 2030 with 70% of those deaths occurring in developing countries. Most people begin using tobacco before the age of 18 and recent trends indicate an earlier age of initiation and rising smoking prevalence among children and adolescents<sup>2</sup>. If this pattern continues, it has been estimated that tobacco use will result in the deaths of 250 million children and young people alive today, most of them in developing countries<sup>3</sup>. In recent years the number of teenagers and women who smoke has grown significantly, with an average age of initiation of 16 years 16<sup>4</sup>.

As in many other developing countries, tobacco use in Mongolia is increasing. A survey conducted by researchers from DMS found that 66% of men, 20% of women and 14% of adolescents that smoked<sup>5</sup>. It is thought that this has contributed to cardiovascular disease and cancer becoming the leading causes of mortality among Mongolian people<sup>6</sup>.

In 2000, the State Inspectorate for Health examined the level of tar and nicotine present in imported tobacco products into Mongolia. Forty one percent of all tobacco products imported into Mongolia exceeded the acceptable limit of tar and nicotine, as stated by law A/15 1994. This shows a lack of monitoring and surveillance for imported products and stresses the importance for tighter quality control in order to protect the health of Mongolian people.

In 2002, a survey was conducted to determine the prevalence of Mongolian people living in a potentially harmful environment due to tobacco exposure. Of the 2400 people involved in the survey, 79.6% were currently living in a potentially harmful environment with 4 in 5 living with smokers. Furthermore, knowledge regarding the harms of smoking was below average, with 42.3% of people not knowing the risks and potential health problems associated with tobacco use<sup>7</sup>.

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<sup>1</sup> Murray CGL, Lopez AD. Alternative projections of mortality and diseases by cause, 1990-2020: global burden of disease study. *Lancet* 1997; 349: 1498-504

<sup>2</sup> US Department of Health and Human Services. Preventing tobacco use among young people. A report of the Surgeon General, 1994. Atlanta, Georgia: Public Health Service, Center for Diseases Control and Prevention, Office on smoking health, 1994 (Governmental printing Office Publication No S/ N 017-001-00491-0). Reprinting with corrections, July 1994

<sup>3</sup> Peto R, Lopez AD, Boreham J, et al. Developing populations. the future health effects of current smoking patterns. In mortality from smoking in developed countries, 1950-2000. Oxford: Oxford University Press, 1994: A101-3

<sup>4</sup> WHO, Tobacco or Health: A global status report, Geneva, 2001

<sup>5</sup> K. Tungalag, Cardiovascular disease's risk factors, and knowledge, attitude and practice of the population, Health Management Information and Education Center, Ulaanbaatar, 1999.

<sup>6</sup> Directorate of Medical Services-Implementing Agency of Government of Mongolia, Health Indicator, 2002

<sup>7</sup> Ministry of Health and Public Health Institute, Knowledge, Attitude and Practice towards risk factors of Non communicable diseases, Ulaanbaatar, 2002

There is currently a lack of available data and baseline figures relating to tobacco use amongst Mongolian youth aged 13-15. There is a need to assess tobacco related knowledge, attitudes and behaviors amongst youth, and develop evidence-based recommendations aimed at promoting a healthy supportive environment to encourage smoking cessation.

**The objectives of this survey include:**

- To estimate the gender sensitive prevalence of tobacco use amongst Mongolian youth
- To define outputs of school based health education curriculum on harms of tobacco use
- To determine behavior results of communication on tobacco cessation
- To identify knowledge and attitudes of youth on unhealthy behavior in regards to tobacco use
- To increase exposure to smoking cessation materials through media and advertising
- To identify tobacco use and mobilize a tobacco free environment
- To estimate access and availability of tobacco products and develop recommendation to decrease availability

**METHODS**

***Sample description***

All schools containing 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade that contained 40 or more students were included in the sampling frame. A two-stage cluster sample design was used to produce a representative sample of students in 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade.

**School Level** - The first-stage sampling frame consisted of all schools containing 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade. Schools were selected with probability proportional to school enrollment size.

**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.

### ***OVERALL RESPONSE RATES:***

**Schools -** 100% - 25 of the 25 sampled schools participated.

**Students-** 92.59% 4,183 of the 4,518 sampled students completed the questionnaires

**Overall response rate -** 100.00% \* 92.59% = 92.59%

### ***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 non-response. 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 and risk behaviors of students in 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade.

### ***The Questionnaire***

The questionnaire was designed to include areas such as, prevalence of tobacco use, school curriculum, smoking cessation, knowledge and attitudes to smoking, media and advertising, environment and access and availability to tobacco products. The questionnaire consisted of 60 questions that had been formulated by a group of experts on tobacco addiction including staff members from GYTS, WHO/TFI and UNICEF.

### ***Data collection and analysis***

All researchers were trained in and implemented the standard survey protocol. Researchers and officers of Ministry of Health, Center of Mental Health and Narcology, Health Promotion Department of the Directorate of Medical Services, the international NGO - ADRA and other related organizations, conducted the survey. The students responded to multi-choice questions on a machine-readable answer sheet. These answer sheets were read and data encoded at the United States Center for Diseases Control and Prevention in Atlanta. The dataset was analyzed at the National Epidemiological Center of Department of Health. Data gathered was analyzed using EPI INFO C-Sample and SUDAAN.



## RESULTS

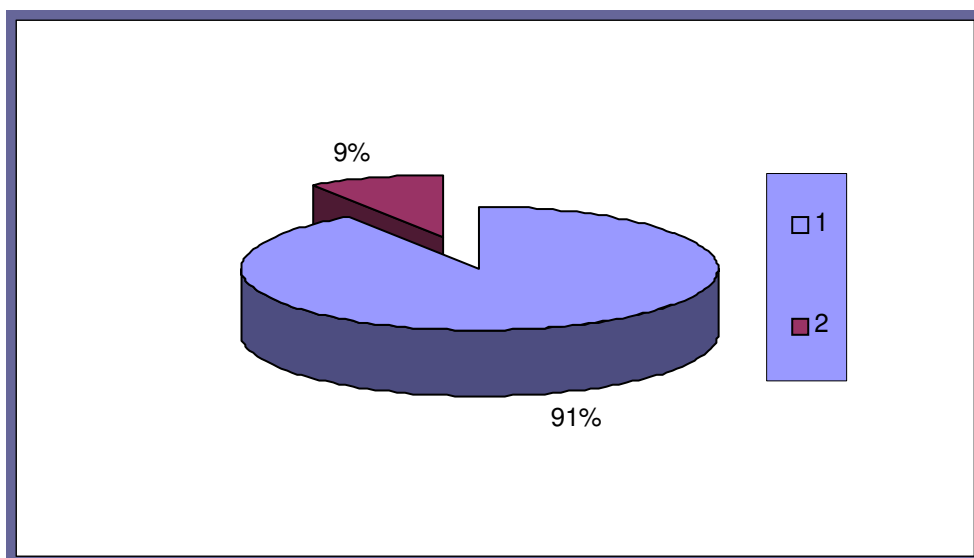
### *Prevalence of tobacco use*

Results showed that approximately 40.4% of students had ever smoked, with boys significantly higher than girls (boys 54.6 ±4.8 vs. girls 28.4 ±5.2). The survey also showed that **15.5%** of students used any tobacco products, with boys again significantly higher than girls (21.4 % vs. 10.6 %). Of those who used tobacco products, 9.2 % smoked cigarettes (15.2 % vs. 4.4%) and 8.0 percent of total youth surveyed used any form of tobacco products (chewing tobacco, snuff and pipe). Of the students surveyed who were considered non-smokers, 15.2% were considered to be susceptible to tobacco smoking with no apparent difference between boys and girls (Table1). In regards to the question, “during the past 30 days how many days did you smoke cigarettes”, 91% answered 0 days and 9% answered between 1 to 30 days (Chart 1).

Table 1: Percent of students who use tobacco, Mongolia - GYTS, 2003

Category	Ever Smoked Cigarettes (even one or two puffs) (%)	Current use (%)			Percent of never smokers who are susceptible to smoking initiation
		Any tobacco products	Cigarettes	Other tobacco products: (chewing tobacco, snuff, dip, cigars, cigarillos, pipe)	
Boys	54.6 ±4.8	21.4± 3.5	15.2±3.5	9.5±1.4	17.6 ± 2.5
Girls	28.4±5.2	10.6 ±2.1	4.4±1.5	6.7 ±1.3	14.0 ± 2.3
<b>Total</b>	<b>40.4±4.7</b>	<b>15.5± 2.4</b>	<b>9.2 ± 2.3</b>	<b>8.0 ±1.1</b>	15.2 ± 1.8

Chart 1: Percent of students who currently use cigarettes, Mongolia - GYTS, 2003



- Percentage of students who have not smoked during the last 30 days
- Percentage of students who have smoked cigarettes on one and more days during the last 30 days.

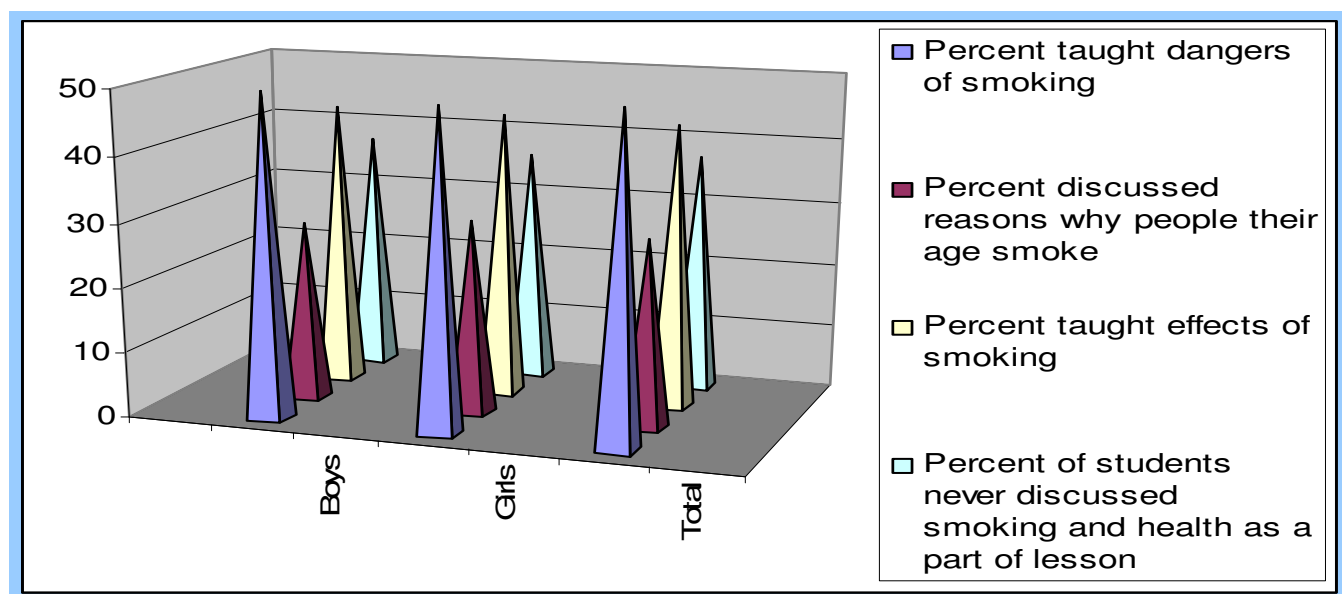
### *School curriculum*

Within the school health education curriculum, 48.9 % of students have been taught about the dangers of smoking during the past year (Table2). Only 3 in 10 (29.0%) students were given the opportunity to discuss reasons why people their age use tobacco (Chart 2). The survey also showed that 44.3 % of students were taught harmful and negative effects of smoking, such as; it makes your teeth yellow, causes wrinkles and makes you smell bad. A total of four in 10 (36.8 %) students answered that they had never discussed smoking and health as a part of their health education lesson. There were no significant differences in knowledge between boys and girls.

Table 2: School Curriculum, Mongolia - GYTS, 2003

Category	Percent taught dangers of smoking	Percent discussed reasons why people their age use tobacco	Percent taught effects of smoking	Percent of students never discussed smoking and health as a part of lesson
Boys	49.7 ±6.8	28.0 ±3.3	44.2 ±5.4	37.8±4.5
Girls	48.7±8.5	30.0 ±4.4	44.5 ±6.9	36.2 ±6.9
Total	48.9 ±7.5	29.0 ±3.6	44.3 ±5.8	36.8 ±5.6

**Chart 2: School curriculum, Mongolia – GYTS, 2003**



***Cessation of smoking***

In regards to smoking cessation, 86.5% of current smokers showed a desire to stop smoking, 75.9% had tried to stop smoking during the last 12 months, 65.3% wanted to stop smoking to improve their health, 84.9% of current smokers thought that if they wanted they would be able to stop smoking and 34.7 percent of current smokers never received help or advice to stop smoking (table 3). Boys demonstrated a higher level of smoking cessation and stated it was to improve their health (Chart 3).

Table 3: Cessation, Mongolia - GYTS, 2003

	Current Smokers (%)				
	Desire to stop	Tried to stop in the last 12 months	Stopped to improve their health	Could stop smoking if they wanted to	Never received help to stop smoking
Boys	87.5 ± 4.6	78.0 ± 5.7	69.3 ± 2.6	85.1 ± 4.3	34.1 ± 6.5
Girls	82.7 ± 11.2	69.3 ± 10.7	58.1 ± 6.9	86.2 ± 6.7	35.7 ± 11.8
Total	86.5 ± 5.7	75.9 ± 5.0	65.3 ± 2.4	84.9 ± 4.1	34.7 ± 4.2

**Chart 3: Cessation, Mongolia – GYTS, 2003**



***Environmental tobacco use***

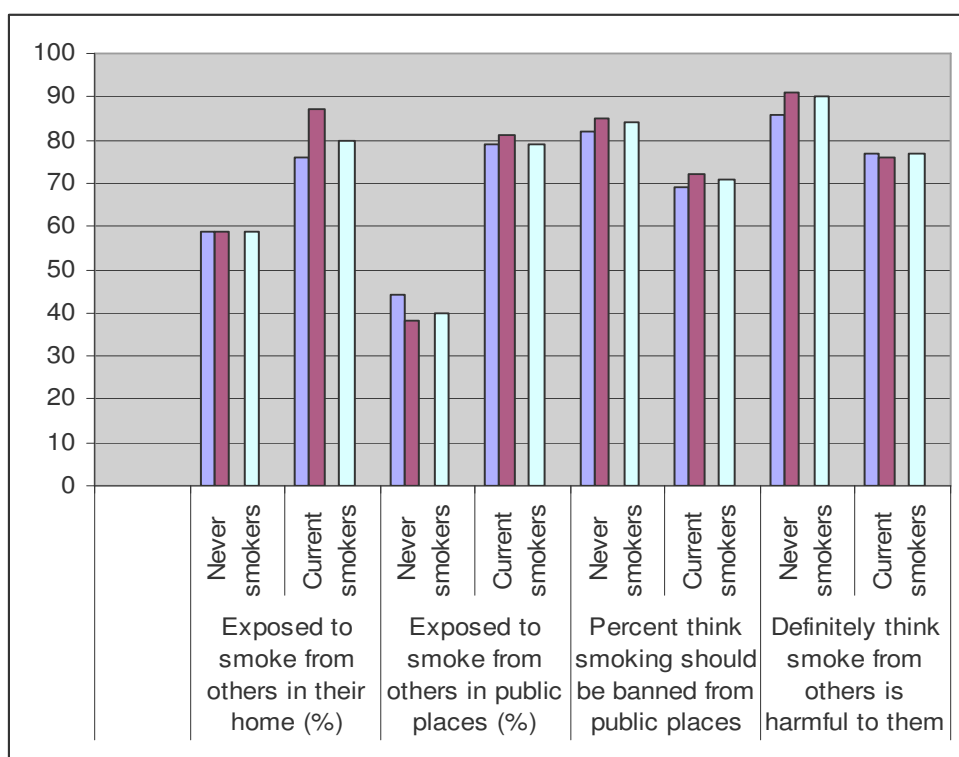
In terms of environmental tobacco smoke, 58.7% of ‘never smokers’ and 79.5% of ‘current smokers’ were exposed to second hand smoke in their homes. The current smokers were exposure more frequently than never smokers, (79.5 % vs 58.7 %) and there appeared to be no significant difference for boys or girls. The survey also showed that 40.4% of ‘never smokers’ and 79.4% of ‘current smokers’ were exposed to second hand smoke in other public places. The ‘current smokers’ were exposed to more smoke in public place than ‘never smokers’ (79.4 % vs 40.4%). Table 4 shows that 84.2% of ‘never smokers’ and 70.5% of current smokers thought that smoking should be banned from public places.

Approximately 9 in 10 of ‘never smokers’ and 8 in 10 of ‘current smokers’ definitely thought that smoking is harmful to themselves and others. A higher percentage of girls compared to boys within the ‘never smoked’ category thought that smoking was harmful to others, there was no significant difference by sex in the ‘current smokers ‘category (Table4)(Chart4).

Table 4: Environmental Tobacco Smoke, Mongolia - GYTS, 2003

Category	Exposed to smoke from others in their home (%)		Exposed to smoke from others in public places (%)		Percent think smoking should be banned from public places (%)		Definitely think smoke from others is harmful to them (%)	
	Never smoked	Current smokers	Never smoked	Current smokers	Never smoked	Current smokers	Never smoked	Current smokers
Boys	58.8 ±4.9	76.3± 8.8	44.5±4.0	78.7± 5.2	82.4±2.6	69.4± 6.6	85.5± 2.7	76.9± 6.4
Girls	58.8 ±3.9	87.2± 7.2	38.3 ±2.1	80.5 ± 8.7	85.0±2.2	72.2±14.8	91.9±1.9	75.7±11.9
Total	58.7 ±3.5	79.5±6.7	40.4± 2.1	79.4±4.7	84.2±2.0	70.5± 5.9	89.7±1.7	76.6± 5.7

**Chart 4: Environmental Tobacco Smoke, Mongolia - GYTS, 2003**



■ Boys ■ Girls ■ Total

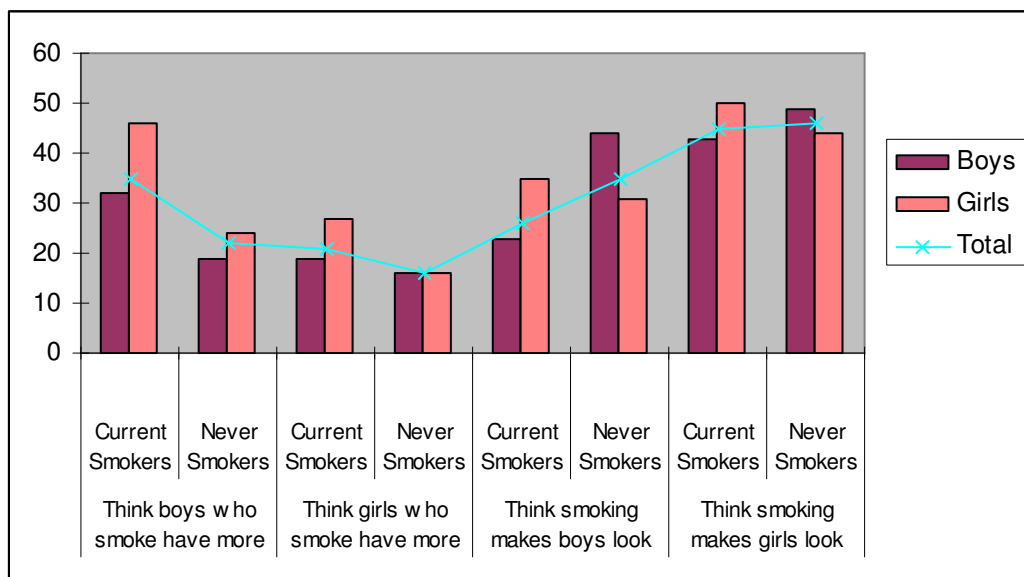
***Knowledge and attitude***

Table 5 (see below) illustrates that, 35.1 % of ‘current smokers’ compared to 21.9% of ‘never smokers’ thought boys who smoke had more friends. About 21.4% of current smokers compared to 15.9% of never smokers thought girls who smoke had more friends. Furthermore, 25.9 % of ‘current smokers’ and 35.4% of ‘never smokers’ believed that smoking made boys look more attractive. These figures were higher with 44.7 % of ‘current smokers’ and 45.8% of ‘never smokers’ believing smoking made girls look more attractive. In other knowledge and attitude related questions, there were no significant differences between sexes.

Table 5: Knowledge and Attitudes, Mongolia - GYTS, 2003

Category	Think boys who smoke have more friends (%)		Think girls who smoke have more friends (%)		Think smoking makes boys look more attractive (%)		Think smoking makes girls look more attractive (%)	
	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers
Boys	31.5±7.4	18.8 ± 3.2	19.2± 4.2	15.7± 2.4	22.8 ± 5.6	43.9± 3.5	43.3 ± 6.9	48.9± 2.6
Girls	46.3±11.6	23.5 ± 2.7	27.3± 9.3	16.0± 2.6	34.6±11.6	31.1± 3.2	49.5±14.8	44.3± 3.6
Total	35.1± 6.0	21.9 ± 2.1	21.4± 3.5	15.9± 2.0	25.9 ± 5.4	35.4± 2.2	44.7 ± 4.9	45.8± 2.7

Chart 5: Knowledge and Attitudes, Mongolia - GYTS, 2003



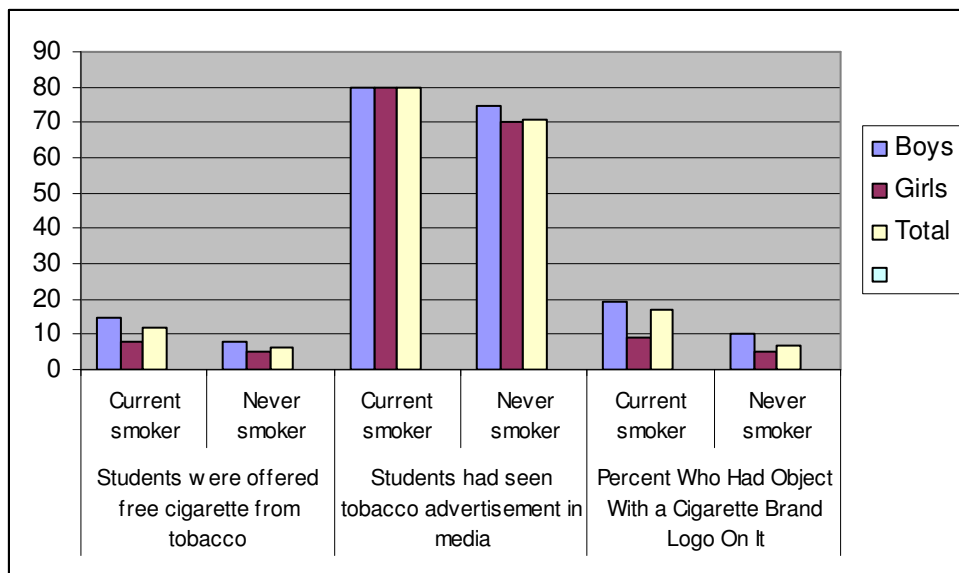
### Media and advertising

An alarmingly high figure of 12.3% of ‘current smokers’ and 6.0 % of ‘never smokers’ had been offered a free cigarette from cigarette representatives. Of all students surveyed, 79.5 % of ‘current smokers’ and 71.6% of ‘never smokers’ had seen cigarette advertisements in newspapers and magazines in the past 30 days. Furthermore, 16.9 % of ‘current smokers’ and 6.8 % of ‘never smokers’ owned an item with a cigarette brand logo on it (Table 6). It is thought that in media and advertising, ‘current smokers’ have more susceptibility than ‘never smokers’ (12.3 % vs 6.0%, 79.5% vs 71.6% and 16.9% vs 6.8%).

Table 6: Media and Advertising Mongolia - GYTS, 2003

Category	Percent of students who were offered a free cigarette from a cigarette representative		Percent of students who have seen cigarette advertisements in newspaper and magazines during the past 30 days		Percent Who Had Object With a Cigarette Brand Logo On It	
	Current smoker	Never smoker	Current smoker	Never smoker	Current smoker	Never smoker
Boys	14.5±4.0	7.7± 2.2	80.0± 5.5	74.9 ± 4.5	19.4± 6.0	10.1±2.0
Girls	6.7± 4.5	5.0± 1.5	79.4±8.5	69.9± 2.7	9.3±5.8	5.1± 1.6
Total	12.3±3.3	6.0±1.3	79.5± 5.2	71.6 ±2.0	16.9±5.4	6.8±1.6

Chart 6: Media and Advertising Mongolia - GYTS, 2003



### ***Access and availability of tobacco products***

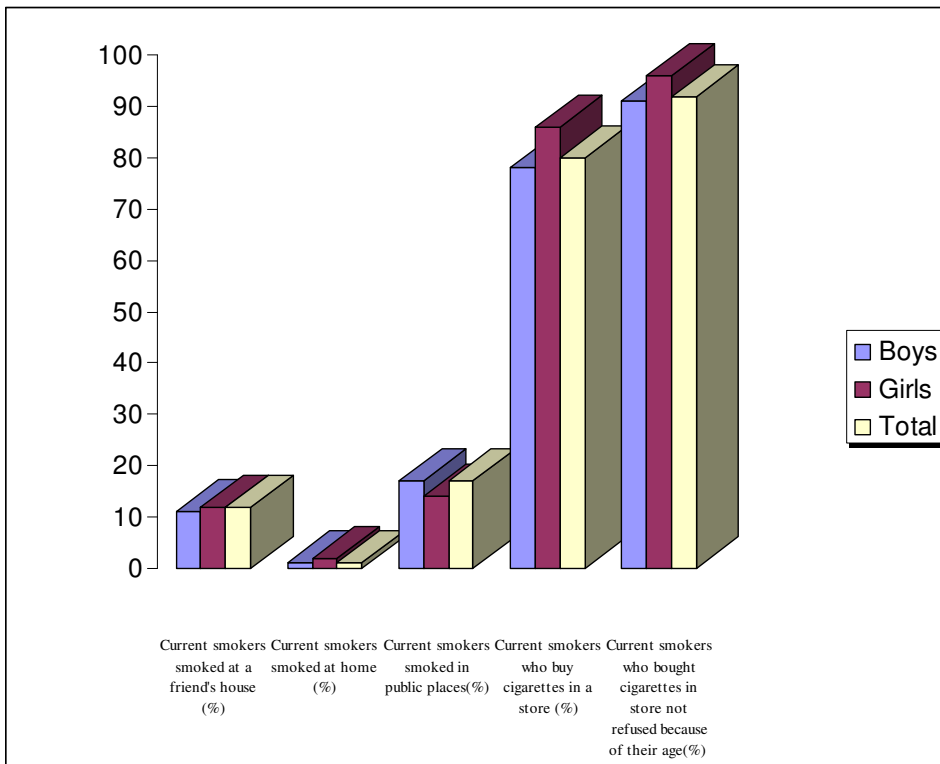
In relation to access and availability, 11.5% of ‘current smokers’ smoked at friend’s houses, (11.4 % for boys and 12.3 % for girls), 1.4 % smoked at home (1.1 % and 2.1 %) and 17.2 % of current smokers usually smoked in public places (17.4 % and 13.7 %). The study found that 8 in 10 of ‘current smokers’ purchased cigarettes in a store with no significant difference between boys and girls, (78.2 % vs. 85.8%) and 92.4 % of current smokers who bought cigarettes in a store were not asked for identification.

Table 7: Access and Availability, Mongolia - GYTS, 2003

Category	Current smokers smoked at a friend's house (%)	Current smokers smoked at work (%)	Current smokers who smoke in public places (%)	Current smokers who buy cigarettes in a store (%)	Current smokers who bought cigarettes in store not refused because of their age (%)
Boys	11.4 ± 4.6	1.1 ± 1.6	17.4 ± 5.7	78.2 ± 6.2	91.2 ± 5.0
Girls	12.3 ± 6.8	2.1 ± 2.8	13.7 ± 10.4	85.8 ± 9.7	95.5 ± 4.9
Total	11.5 ± 3.8	1.4 ± 1.4	17.2 ± 6.2	79.6 ± 6.3	92.4 ± 3.6



**Chart 7: Access and Availability, Mongolia - GYTS, 2003**



**DISCUSSION**

The prevalence of current tobacco use is 15.5 % amongst youth aged 13-15 in Mongolia, with 9.2% smoking cigarettes and 8.0 % using other tobacco products (Chewing tobacco, snuff, dip, cigars, cigarillos, little cigars, pipe). At present, 40.4 % of Mongolian students have smoked at least once. Of those who are currently not smoking, 15.2 % are considered as ‘susceptible to initiating smoking’. In relation to gender sensitive data, Mongolia currently shows figures similar to that of other Asian countries, boys have a significantly higher rate of smoking compared to girls.

In school health education curriculum, 48.9 % were taught about the dangers of smoking during the past year. Only 3 in 10 students discussed reasons why people of their age smoke in Mongolia and 44.3 % have been taught the negative effects of smoking. An estimated 4 in 10 students have never discussed smoking and health as a part of their health education lesson.

In regards to cessation, as in other developing countries, (Port-au-Prince, Haiti, Tarapoto, Peru, rural Poland, Mizoram and Nagaland, India, Jakarta, Indonesia, Shandong and Tianjin, China; Northern Mariana Islands and Philippines) 8 in 10 ‘current smokers’ in Mongolia desired and had tried to stop in the last 12 months. Of those, 65.3% wanted to stop smoking to improve their health, 84.9 percent of ‘current smokers’ thought they could stop if they wanted to and 34.7% of ‘current smokers’ never received help or advice when trying to quit stop smoking. In conclusion, ‘current smokers’ need access to behavior change communication, sustainability and a supportive environment to maintain and encourage smoking cessation.

In relation to environmental tobacco smoke, ‘current smokers’ were significantly more likely than ‘never smokers’ to be exposed to smoke in their homes, and in other public places. Approximately 7 or 8 in 10 students think smoking should be banned in public places and 8 or 9 of 10 students definitely think second hand smoke from others is harmful to them. Although many students demonstrated the knowledge that tobacco use is dangerous, had the desire and had tried to quit smoking, they lived in an environment of high tobacco use, with exposure to second hand smoke in their homes and public places being a common occurrence.

The survey showed that approximately 3 in 10 students think boys who smoke have more friends and 2 in 10 students believe that girls who smoke have more friends. One in three students who smoked thought smoking makes boys look more attractive, whereas 1 in 5 students who smoked think smoking makes girls look more attractive. There is therefore a need to develop tobacco cessation messages using participatory research in order to develop messages that are appropriate and applicable for Mongolian youth.

In relation to media and advertisement, 1 in 10 students have been offered a free cigarette from cigarette representatives and 8 or 7 in 10 of students had seen cigarette advertisements in newspaper and magazines during the past 30 days. Furthermore, 1 or 2 in 10 students owned an item with a cigarette logo on it.

Of ‘current smokers’, 1 in 10 usually smoked at friend’s houses, 1 in 10 at home and 2 in 10 of students smoked in public places. The study also showed that 8 in 10 of ‘current smokers’ purchased cigarettes in a store and 9 in 10 of ‘current smokers’ who brought cigarettes in a store were not asked for identification. Although Mongolia has a law prohibiting tobacco sales to youth it appears that this law is not enforced.

## **CONCLUSION**

GYTS, Mongolia was a survey conducted to 4,183 students of 25 sampled schools. The dataset was analyzed using EPI INFO C-Sample and SUDAAN. The age of students included in the survey were between 13-15 years.

The study discovered a prevalence of current tobacco use amongst this age group to be 15.5 %, with 9.2% smoking cigarettes and 8 % using other tobacco products. There were an estimated 40.4 % of students who had ever smoked in Mongolia. Approximately 48.9 % were taught about the dangers of smoking during the past year, while only 3 in 10 students discussed reasons why people their age smoke. Around 8 in 10 current smokers in Mongolia desired and had tried to stop within the last year.

## RECOMMENDATIONS

In Mongolia, cardiovascular disease and cancer have become the leading form of mortality<sup>5</sup>. At the same time, as in other developing countries tobacco use is increasing amongst youth. If these patterns continue, tobacco use will result in the deaths of many thousands of young people. The data of tobacco use among youth in Mongolia requires a comprehensive prevention intervention plan focusing on community as well as schools in order to achieve the following:

- Reducing exposure to environmental tobacco smoke through banning all forms of tobacco use on public places and school grounds, and creating tobacco free schools, communities and public places.
- Health education curriculum used in schools should be revised to include life skills training on healthy lifestyle and behavior. There should be a consolidated effort for schools to focus on designing curriculum geared towards tobacco prevention and organize school wide tobacco prevention and cessation events.
- Encourage tobacco cessation for smokers and increase sustainability and a supportive environment to aid smokers in the cessation process.
- Change community norms regarding tobacco use through increasing public awareness about the harmful health consequences of tobacco use and the addictive nature of smoking using evidence based prevention messages.
- Reduce adolescent exposure to misleading and faulty tobacco industry advertisements through mass media, and stop all forms of tobacco promotion, such as sponsoring sporting and cultural events and the distribution of items carrying tobacco brands and logos.
- Reducing youth access to tobacco products through issuing laws and regulations to reduce illegal tobacco sales to people under 18 years of age.

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- <sup>6</sup> Directorate of Medical Services-Implementing Agency of Government of Mongolia, Health Indicator, 2002
- <sup>7</sup> Ministry of Health and Public Health Institute, Knowledge, Attitude and Practice towards risk factors of Non communicable diseases, Ulaanbaatar, 2002

## Acknowledgements

This survey was supported in full by WHO/WPRO and US Center for Diseases Control and Prevention in Atlanta. We would like to thank Dr. Charles W. Warren, Mr. Burke Fishburn, Dr. Harley Stanton, Jonathan Santos, Veronica Lea and Mark Tabladillo and Reijo Salmela for their study design and reviews and comments on the final report.

The following national organizations and individuals have contributed towards the successful implementation of this survey:

### Ministry of Health

Ts. Sodnompil	State secretary MOH
G. Tsetsegdary	Officer in charge of NCD, MOH

### Directorate of Medical Services

S. Dulamsuren	Chief of Directorate of Medical Services
D. Jargalsaikhan	Head of Health Promotion Department of DMS
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Z. Tuya	CMHN
S. Munkhtuya	CMHN
B. Dorjmaa	CMHN
G. Narantuya	CMHN
J. Narantungalag	CMHN
I. Tungalagtuya	CMHN
D. Ouynsuren	CMHN
S. Naijav	CMHN
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