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Linking Global Youth Tobacco Survey (GYTS) Data to the WHO Framework
Convention on Tobacco Control: The Case for Bhutan

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Abstract

Bhutan became a party to the WHO Framework Convention on Tobacco Control (WHO FCTC) after its ratification on 24 August 2004. The WHO FCTC requires all Parties to inform all persons of the health consequences of tobacco consumption and exposure to tobacco smoke. Each Party has agreed to develop, implement and evaluate effective tobacco control programs to measure progress in reaching the goals of the WHO FCTC. The Global Youth Tobacco Survey (GYTS) was developed to provide data on youth tobacco use to countries for their development of youth based tobacco control programs. Bhutan has banned the sale of tobacco products within the entire kingdom while smoke free areas have been identified. A limit for import of tobacco products for personal consumption has been also set. A national implementation strategy has been drawn up and approved by the Royal Government for implementation. Data in this report can be used as baseline measures for future evaluation of the tobacco control initiatives. The key for Bhutan is to ensure the enforcement of the various notifications and use the data from GYTS to monitor progress toward achieving the goals of the WHO FCTC. When these goals are met, tobacco consumption and exposure in Bhutan will have declined substantially.

I. Introduction

The World Health Organization (WHO) Framework Convention on Tobacco Control (WHO FCTC) was unanimously adopted by the 56th World Health Assembly in May 2003 and became an international law on February 27, 2005 (1). Bhutan ratified the WHO FCTC on 24 August 2004. The WHO FCTC is the first global public health treaty on tobacco control. The WHO FCTC provides the driving force and blueprint for the global response to the pandemic of tobacco-induced death and disease. The Convention embodies a coordinated, effective, and urgent action plan to curb tobacco consumption, laying out cost-effective tobacco control strategies for public policies, such as bans on direct and indirect tobacco advertising, tobacco tax and price increases, promoting smoke-free public places and workplaces, and prominent health messages on tobacco packaging. In addition, the Convention encourages countries to address cross-border issues, such as illegal trade and duty-free sales. One important feature of the WHO FCTC is the call for countries to establish programs for national, regional, and global surveillance (Article 20).

Research, surveillance and exchange of information – The parties shall establish, as appropriate, programmes for national, regional and global surveillance of the magnitude, patterns, determinants and consequences of tobacco consumption and exposure to tobacco smoke. Towards this end, the Parties should integrate tobacco surveillance programmes into national, regional and global health surveillance programmes so that data are comparable and can be analyzed at the regional and international levels, as appropriate (1).

WHO, the U.S. Centers for Disease Control and Prevention (CDC), and the Canadian Public Health Association (CPHA) developed the Global Tobacco Surveillance System (GTSS) to assist all 192 WHO Member States in establishing continuous tobacco control surveillance and monitoring (2). The GTSS provides a flexible system that includes common data items but allows countries to include important unique information, at their discretion. It also uses a common survey methodology, similar field procedures for data collection, and

similar data management and processing techniques. The GTSS includes collection of data through three surveys: the Global Youth Tobacco Survey (GYTS) for youth, and the Global School Personnel Survey (GSPS) and the Global Health Professional Survey (GHPS) for adults. The GYTS has been completed by over 2 million students in 140 countries (3).

The purpose of this paper is to use data from the GYTS conducted in Bhutan in 2006 to monitor Articles in the WHO FCTC.

II. The Global Youth Tobacco Survey (GYTS)

In 1999, 11 countries (Barbados, China, Fiji, Jordan, Poland, Russian Federation, South Africa, Sri Lanka, Ukraine, Venezuela, and Zimbabwe) pilot-tested the first GYTS (4). All 11 countries completed successful surveys during 1999. After this initial success, many countries asked WHO and CDC for assistance in participating in GYTS. The GYTS data in this report include Bhutan 2006. The school response rate was 93.33% and the student response rate was 95.48%.

The GYTS uses a standardized methodology for constructing sampling frames, selecting schools and classes, preparing questionnaires, carrying out field procedures, and processing data. The GYTS includes data on prevalence of cigarette and other tobacco use, perceptions and attitudes about tobacco, access to and availability of tobacco products, exposure to secondhand smoke, school curricula, media and advertising, and smoking cessation.

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 unique country-specific questions. The final country questionnaires are 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 following data are presented in this report: lifetime cigarette use; initiation of smoking before age 10; likely initiation of smoking during the next

year among never smokers (i.e., susceptibility)¹; current cigarette smoking, current use of tobacco products other than cigarettes; dependency on cigarettes among current smokers; exposure to secondhand smoke (SHS) at home; exposure to SHS in public places; desire for a ban on smoking in public places; students who were taught in school about the dangers of smoking, the reasons why young people smoke, or were taught about the effects of smoking on their health; students who saw advertisements for cigarettes on billboards or newspapers or magazines; students who have an object with a cigarette brand logo on it; smokers who want to stop, have tried to stop, and received help to stop smoking; and access and availability to cigarettes among smokers.

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 (5)

III. Methods

The GYTS is a school-based survey of defined geographic sites which can be countries, provinces, cities, or any other sampling frame including sub national areas, non-Member States, or territories. The GYTS uses a two-stage cluster sample design that produces representative samples of students in grades associated with ages 13–15. The sampling frame includes all schools containing any of the identified grades. At the first 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. All students in selected classes attending school the day the survey is administered are eligible to participate. Student participation is voluntary and anonymous using self-administered data-collection procedures. The GYTS sample design produces representative, independent, cross-sectional estimates for each site. For cross-site comparisons, data in this paper are limited to 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, class, and student 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 which are shown as lower and upper bounds (6).

IV. Sample description

All schools containing grades VI, VII and VIII 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 grades VI, VII and VIII.

School Level - The first-stage sampling frame consisted of all schools containing grades VI, VII and VIII. 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 - 93.33% 28 of the 30 sampled schools participated.

Students- 95.48% 1,921 of the 2,012 sampled students completed usable questionnaires

Overall response rate - $93.33\% * 95.48\% = 89.11\%$

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 nonresponse. 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 nonresponse adjustment factor calculated by school size category (small, medium, large).

f2= a class adjustment factor calculated by school

f3 = a student-level nonresponse adjustment factor calculated by class

USE OF THE WEIGHTED RESULTS:

The weighted results can be used to make important inferences concerning tobacco use risk behaviors of students in grades VI, VII and VIII.

IV. Results

A total of 1921 students out of the 2012 selected completed the survey.

5.1 Tobacco use

Table 1: Percent of students who use tobacco

Category	Ever Smoked Cigarettes, Even One or Two Puffs	Current Use			Never Smokers B Susceptible to Initiating Smoking
		Any Tobacco Product	Cigarettes	Other Tobacco Products	
Total	25.4	23.7	15.6	15.9	10.6
Male	37.6	33.5	23.3	22.0	14.7
Female	12.7	13.3	7.5	9.0	7.9

One in four (25.4%) of all students have already tried smoking cigarettes, with rates thrice higher for males (37.6%) as compared to females (12.7%). Almost one fourth (23.7%) of all students currently use at least one form of tobacco product, with males being more than twice as high (33.5%) when compared to females (13.3%). 15.6% of all students currently smoke with males being thrice as high (23.3%) when compared to females (7.5%) while 15.9% of all students use other form of tobacco products. One in ten (10.6%) of Never Smokers was found to be susceptible to initiating smoking.

5.2 School Curriculum

Table 2: School Curriculum

Category	Percent taught dangers of smoking	Percent discussed reasons why people their age smoke
Total	58.2	41.8
Male	58.4	43.4
Female	57.4	39.8

Overall more than half (58.2%) of the students reported that they were taught the dangers of smoking in school within the past year while only 41.8% of students reported that they had discussed reasons as to why people their age smoke.

5.3 Cessation

Table 3: Cessation

Category	Current Smokers	
	Percent desire to stop	Percent tried to stop this year
Total	85.4	86.7
Male	86.0	87.1
Female	89.8	86.2

85.4% of all smokers had desire to stop smoking while 86.7% had tried to stop smoking during the past year.

5.4 Environmental Tobacco Smoke

Table 4: Environmental Tobacco Smoke

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 Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers
Total	28.2	52.0	48.5	74.8	45.7	48.1	63.8	60.6
Male	29.3	52.7	50.2	74.9	44.8	49.7	64.4	64.1
Female	28.0	45.4	48.1	72.4	46.4	46.6	63.6	53.0

Over one in four (28.2%) of never smokers and more than half (52%) of current smokers reported that they have been exposed to smoke from others in their home while almost half (48.5%) of Never smokers and three out of four (74.8%) of current smokers has been exposed to smoke from others in public places.

Almost half of both Never smokers (45.7) and current smokers (48.1) think that smoking should be banned from public places.

5.5 Knowledge and Attitudes

Table 5: Knowledge and Attitudes

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	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers
Total	39.3	48.2	17.3	21.0	16.2	23.3	12.4	13.1
Male	36.6	48.7	20.5	18.5	15.9	24.6	12.4	12.5
Female	40.2	51.1	14.9	29.3	16.1	26.3	12.2	16.5

Over one third (39.3%) of never smokers and almost half (48.2%) of current smokers reported that they think that boys who smoke have more friends. On the contrary only 17.3% of never smokers and 21.0% of current smokers think that girls who smoke have more friends. 16.2% of never smokers and 23% of current smokers think smoking makes boys look more attractive while 12.4% of never smokers and 13.1% of current smokers think smoking makes girls look more attractive.

5.6 Media Advertising

Table 6: Media and Advertising

Category	Percent Saw Anti-Smoking Media Messages	Percent Saw Pro-Tobacco Messages in Newspapers and Magazines		Percent Who Had Object With a Cigarette Brand Logo On It		Percent Offered free Cigarettes by a Tobacco Company Representative	
		Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers
Total	83.0	73.6	74.7	8.8	19.3	8.8	26.8
Male	83.1	71.2	76.1	11.2	20.6	10.4	27.7
Female	82.6	75.5	70.9	7.2	14.0	7.9	21.9

More than four in five (83%) of all students reported having seen anti-smoking messages on media. Almost three fourths of both never smokers(73.6%) and of current smokers(74.7%) reported having seen pro-tobacco messages in Newspaper and magazines. 8.8% of never smokers and 19.3% of current smokers had objects with cigarette brand logo on it. Almost one in ten (8.8%) of never smokers and more than one fourth (26.8%) of current smokers have been offered free cigarettes by a tobacco company representative.

5.7 Access and Availability

Table 7: Access and Availability

Category	Percent Current Smokers who Usually Smoke at Home	Percent Current Smokers who Purchased Cigarettes in a Store	Percent Current Smokers Who Bought Cigarettes in a Store Who Were Not Refused Because of Their Age
Total	16.0	39.9	47.5
Male	12.2	40.4	48.5
Female	23.7	40.1	46.6

16% of current smokers reported that they usually smoked at home. 39.9% of current smokers had purchased cigarettes in a store while almost half (47.5%) of current smokers had bought cigarettes without being refused because of their age.

VI. Discussion

The WHO FCTC and GYTS share the same goal: the development, implementation, and evaluation of effective tobacco control programs in all WHO Member States. What the WHO FCTC asks countries to monitor, the GYTS can help to measure. The GYTS provides indicators for measuring achievement of seven WHO FCTC Articles (surveillance and monitoring, prevalence, exposure to secondhand smoke, school-based tobacco control, cessation, media and advertising, and minor's access and availability). The WHO FCTC calls for countries to use consistent methods and procedures in their surveillance efforts. The GYTS was designed for exactly this purpose (i.e., the sampling procedures, core questionnaire items, training in field procedures, and analysis of data are consistent across all survey sites). Bhutan has conducted nationally representative GYTS following this lead. The results from this effort can be used to set a baseline for monitoring specific WHO FCTC Articles.

6.1. Article 8: Protection from exposure to tobacco smoke

Bhutan issued a notification in 2005 prohibiting smoking in public places throughout the nation.

From the GYTS data, almost one third of the students reported that they were exposed to smoke at home while more than half of the students were exposed to smoke in public places. This data indicates that environmental tobacco smoke is still an issue that needs to be addressed including the enforcement of smoke free areas. The smoking ban in itself does not have the popular support as far as the students are concerned since less than half of the students were in favour of banning smoking in public places.

6.2. Article 12: Education, communication, training and public awareness

Following the resolution passed by the National Assembly of Bhutan in August 2004 to ban sale of tobacco products, efforts to educate and raise public awareness.

Overall, about six tenths of the students in Bhutan reported having been taught about the dangers of smoking and four tenths of the students reported having discussed reasons why people their age smoke during the past year. Coverage of such issues at the school level needs to be studied to ensure that such knowledge becomes universal.

6.3. Article 13: Tobacco advertising, promotion and sponsorship

Advertising of tobacco products in all media channels has been banned since 1995. However, cross bordering advertising through foreign TV channels and movies, and other print media continue. GYTS points to the fact that majority of the students are still exposed to pro-tobacco messages.

6.4. Article 14: Demand reduction measures concerning tobacco dependence and cessation

The National Steering Committee on Tobacco Control has recommended that demand reduction be given the major impetus in terms of tobacco control measures since the supply will automatically cease when there is no demand.

Almost nine in ten of current smokers wanted to stop smoking and have tried to stop during the past year but have failed. This finding suggests a need to initiate youth cessation programs.

6.5. Article 16: Sales to and by minors

The sale of tobacco products has been banned in the entire country since 17 December 2004. However, the GYTS points to the fact that students can still buy tobacco products from the shops despite their age. Almost half of the students who smoked reported that they had purchased cigarettes from the shops and that they were not refused because of their

age. This suggests that the ban is not very effective and calls for stricter enforcement.

6.6. Article 20: Research, surveillance and exchange of information

Not much of research in the area of tobacco control has been carried out in Bhutan. Further work in this area needs to be undertaken for the design, monitoring and evaluation of tobacco control measures.

A proper surveillance mechanism also needs to be put in place and ensure that the information is shared with all the relevant sectors.

VII. CONCLUSION

Bhutan while having taken significant measures in the area of tobacco control has to ensure that these are implemented properly. GYTS data must serve as a basis for the development of the national tobacco control policy and plan of action. Development of comprehensive tobacco control legislation is a key element to ensure the success of implementing tobacco control program. The strong stance by Bhutan in tobacco control will help to protect the health of the Bhutanese population and serve as a shining example for the global community.