Report of first Global School-based Student Health Survey (GSHS) Bangladesh, 2014

Ministry of Health & Family Welfare

World Health Organization

REGIONAL OFFICE FOR South-East Asia

Report of first Global School-based Student Health Survey (GSHS) Bangladesh, 2014

National Centre for Control of Rheumatic Fever and Heart Disease
Ministry of Health & Family Welfare, Dhaka, Bangladesh

and

World Health Organization
Regional Office for South-East Asia, New Delhi, India

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Contents

Abbreviations and acronyms v

Acknowledgements vi

Contributors vii

Message from Health Minister, Bangladesh viii

Message from the WHO Representative ix

Executive summary x

1. Introduction 1

2. Methods 3

2.1 Sampling of schools 3

2.2 Questionnaire and its administration 4

2.3 Implementation of the survey and response rate 5

2.4 Data management and analyses 5

3. Results 6

3.1 Lifestyle factors 7

3.2 Tobacco, alcohol and substance abuse 12

3.3 Mental health, violence and injury 18

3.4 Violence and injury 22

3.5 Sexual behaviour and HIV/AIDS 24

4. Discussion 27

4.1 Increasing prevalence of cigarette smoking 27

4.2 Diet, nutrition and physical activity 27

4.3 Hygiene 28

4.4 Mental health and psychosocial environment 28

4.5 Limitations of the survey 29

5. Recommendations...30

References.. 32

Annexes

1. Map of Bangladesh showing location of study schools for GSHS 2014 .. 36
2. Questionnaire, Bangladesh GSHS, 2014 37
3. Recall periods for the questions 58
4. Factsheet, Bangladesh GSHS, 2014 60
5. Detailed tabulation for all indicators
(available only on web - https://nada.searo.who.int/index.php/catalog/33)

Abbreviations and acronyms

AIDS	acquired immune deficiency syndrome
BMI	body mass index
CDC	Centers for Disease Control and Prevention
CI	confidence interval
GATS	Global Adult Tobacco Survey
GSHS	Global School-based Student Health Survey
HIV	human immunodeficiency virus
ITC study	International Tobacco Control study
IYCN	Infant and Young Child Nutrition
NCCRF&HD	National Centre for Control of Rheumatic Fever and Heart Disease
NCD	noncommunicable disease
OCR	optical character recognition
SD	standard deviation
STEPS	STEPwise approach to surveillance
STI	sexually transmitted infection
UNAIDS	Joint United Nations Programme on HIV and AIDS
UNESCO	United Nations Organization for Education, Science and Culture
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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Contributors

1. Dr Kamrun Nahar Choudhury
   National Center for Control of Rheumatic Fever and Heart Disease
   Bangladesh
   Email: c.kamrun2014@gmail.com

2. Dr M Mostafa Zaman
   World Health Organization Country Office, Bangladesh
   Email: zamanm@who.int

3. Dr Tara Mona Kessaram
   World Health Organization Country Office, Bangladesh
   Email: kessaramt@who.int

4. Dr Ferdous Hakim
   World Health Organization Country Office, Bangladesh
   Email: hakimf@who.int

5. Dr Salma Zareen
   National Centre for Control of Rheumatic Fever and Heart Disease
   Bangladesh
   Email: nccrfhd@hospi.dghs.gov.bd

6. Dr Manju Rani, Regional Adviser
   World Health Organization Regional Office for South-East Asia, India
   Email: ranim@who.int

7. Ms Leanne Margaret Riley
   World Health Organization headquarters, Geneva, Switzerland
   Email: rileyl@who.int

8. Dr Laura Kann
   Centers for Disease Control and Prevention (CDC), Atlanta, USA
   Email: lkk1@cdc.gov

9. Mr Naveen Agarwal
   World Health Organization Regional Office for South-East Asia, India
   Email: agarwaln@who.int

Message from Health Minister, Bangladesh

Zahid Maleque, MP
Minister
Ministry of Health & Family Welfare
Govt. of the People's Republic of Bangladesh

জাহিদ মালেক, এমপি
মন্ত্রী
স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

I am very happy to learn that Bangladesh has completed the Global School-based Student health survey (GSHS) 2014 successfully. I sincerely thank the National Center for Control of Rheumatic Fever and Heart Diseases, Dhaka, for implementing this nationwide school health survey as part of the GSHS initiative.

Data on lifestyle of adolescents and psychosocial environment in schools are largely lacking in Bangladesh. GSHS collected these data from all over Bangladesh for school students of grades VII to X for children between 13 to 17 years. The results and recommendations of this survey will be useful for prioritization of issues, and for developing programmes and policies for health of school children in Bangladesh.

I would like to thank the World Health Organization and the US Centres for Disease Control and Prevention (CDC) for their technical assistance for conduct this survey. I expect that the officials of the Ministry of Health and Family Welfare and Ministry of Education will continue to strengthen efforts to further improve the ongoing and upcoming initiative to promote the health of future generations of the country.

Joy Bangla, Joy Bangabandhu
Long live Bangladesh

Zahid Maleque

Message from the WHO Representative

Bangladesh is facing a double burden of communicable and noncommunicable diseases, risk factors which may develop in youth with a lasting impact on health into adulthood.

The Global School-based Student Health Survey (GSHS) in Bangladesh is the first-ever integrated survey to provide nationally representative data on a comprehensive set of these risk factors, including tobacco use, nutritional status, dietary habits, physical activity, sexual behavior, violence and injuries, and mental health, among students aged 13 to 17 years. The survey highlights the critical health issues facing adolescents, which constitute almost one-fifth of the total population in Bangladesh.

The data presented here can be utilized to develop national and local policies and programmes to protect and promote the health of young people in Bangladesh. Integration of GSHS into the national surveillance system and strategy will be essential to assess progress. This first survey provides a valuable baseline upon which to evaluate the impact of collective action.

I congratulate the Ministry of Health and Family Welfare and the Ministry of Education for implementation of GSHS. WHO looks forward to continuing collaboration and providing technical support on adolescent health.

Dr Bardan Jung Rana
WHO Representative to Bangladesh

Executive summary

Nearly one third of the global burden of disease has its roots in adolescence. Schools are an important venue to inculcate healthy lifestyle behaviours by promoting a supportive environment and making the necessary adaptions in the school curriculum.

Bangladesh undertook the first Global School-based Student Health Survey (GSHS) in 2014 among students enrolled in classes 7–10 in Bengali-medium schools covering 2989 students in 61 out of 63 schools. English-medium schools and Islamic religious schools (*madrashas)* were excluded. Most of the students in these classes were 13–17 years of age, though a small proportion of students were less than 12 or more than 17 years of age. However, the findings reported here are limited to the 13–17 years age group (2878 students) only. The school response rate was 97%, student response rate was 94%, and overall response rate was 91%. The sample comprised 65.2% boys and 34.8% girls.

The GSHS measured nutritional status, dietary behaviours, hygiene, physical activity; tobacco, alcohol and drug use; violence and unintentional injury, mental health, including protective social relationships; and sexual behaviours, including knowledge of HIV infection and AIDS. Students reported their responses anonymously to each question on computer-scannable answer sheets.

Dietary habits and nutritional status. The survey revealed low consumption of fruits and vegetables along with high consumption of unhealthy food (fast food) and drinks (sugary carbonated beverages) and low physical activity, which are a cause for concern. Less than a quarter of the students (22%) usually ate fruit, and only one in three students ate vegetables. Almost half of the students drank carbonated soft drinks. About one fourth of the students ate from a fast food restaurant three or more times per day. About four in 10 students (41.4%) were physically active for at least 60 minutes per day on all seven days and half of the students (49.4%) attended physical education classes on three or more days each week. This high prevalence of unhealthy dietary behaviours and low physical activity may fuel an obesity epidemic and consequently a high burden of NCDs. Already 8.6% of the students was overweight and 1% was obese. However, this coexisted with a relatively high proportion of students (12.9%) going hungry most of the time or always, and 13.9% of students measured to be underweight.

Tobacco, alcohol and drug use. One in 10 students used tobacco products; 7.7% smoked cigarettes and 6% used other tobacco products. However, over 60% of smokers had attempted to quit. About one third (30%) of the students were exposed to second-hand smoke. In addition, 1.6% of students reported using alcohol, and 1.6% and 1.9% reported ever used drugs such as marijuana, amphetamine or methamphetamine, respectively.

Violence and physical injuries. In this survey, nearly two thirds of the students reported being physically attacked and 43.6% reported being seriously injured. Moreover, one of every four students was bullied on one or more days during past 30 days.

Mental health. More than one in 10 students (11%) reported being lonely and 4.9% of students had seriously considered attempting suicide. Only half of the students (47.2%) reported that their parents understood their problems or worries and only 42.9% reported that their parents knew what they did with their free time.

Reproductive health. Sexual health and prevention of teenage pregnancy are important public health priorities in Bangladesh. Almost one in 10 (9.3%) students reported ever having had sexual intercourse. About one in five students (21.8%) had not heard about HIV infection or AIDS.

Personal hygiene. The majority (97%) of the students washed their hands before eating and 87% brushed their teeth regularly. However, handwashing after using the toilet was low.

The way forward

The results of this first nationwide school health survey in Bangladesh revealed some largely neglected issues in adolescent health: unhealthy dietary habits, low physical activity, tobacco use, bullying, loneliness and thoughts of suicide, and interpersonal violence. Bangladesh should take appropriate measures to formulate and implement appropriate interventions targeted at the youth. It is necessary to establish relationships between home and school involving students, teachers and parents/guardians to create a better psychosocial environment. The school curriculum should be reviewed to reinforce healthy dietary habits, physical activity, risks of tobacco use, and knowledge of HIV/AIDS and sexual health.

1. Introduction

Adolescents comprise an important demographic group in developing countries. As per World Health Organization (WHO) estimates, nearly 35% of the global burden of disease has roots in adolescence *(1).* The health status of adults is mostly an outcome of health behaviours initiated at younger ages during adolescence *(1).* Several behavioural risk factors among adolescents deserve special attention. These include unhealthy diet, lack of physical activity, poor personal hygiene and sanitation, stress/depression, drug abuse and tobacco/alcohol consumption. Many of these risk factors, such as tobacco use, physical inactivity, excess of alcohol and unhealthy diet, are initiated in adolescence and lead to noncommunicable diseases (NCDs) in adulthood, with the risk of premature mortality. Prevention or control of these risk factors later in life is challenging because, over time, these become an integral part of people's lifestyles and are more difficult to change. Therefore, primary prevention of risk factors in children and adolescents is very important.

According to latest Census of Bangladesh, 20.5% of the population is between 10 and 19 years of age *(2).* Thirteen million of them fall in the age group of 13–17 years, comprising 9% of the total population.

Information on the prevalence of behavioural risk factors in adolescents is required to develop appropriate policies and programmes. In Bangladesh, some surveys and specific research studies have been reported for specific risk factors and/or conditions. For example, data on tobacco use were generated from the Global Youth Tobacco Survey (GYTS) in 2004, 2007 and 2013 *(3).* The Global Adult Tobacco Survey (GATS) in 2009 *(4)* and International Tobacco Control (ITC) *(5)* surveys also reported tobacco use data among those 15 years or older.

However, there are major data gaps with respect to several other risk factors. The Infant and Young Child Feeding project reported the nutritional status of children only at the subnational level *(6)*, and data for adolescents at the national level were lacking *(7).* Similarly, while the WHO *Global report* indicates a high rate of suicide in Bangladesh *(8)*, local country data for adolescents were not available. Substance abuse data were available only

for children of Dhaka division. Data on sexual behaviour were available only for married adolescent girls and less so for other adolescents *(9).* Regarding physical activity data, only one small study reported some data using a "screen-time" approach *(10)*, but physical activity data collected using a standard approach were not available *(11).* Injury data among children at the national level were reported in 2004 *(12)* and mortality and morbidity have been reported from an injury surveillance site *(13).* Policy-makers and programme managers need nationally representative data to protect adolescents and future generations by developing appropriate interventions. Nationally representative data on multiple risk factors and behaviours among adolescents in Bangladesh are limited.

Considering the public health and demographic importance of the health of adolescents, WHO, the Centers for Disease Control and Prevention (CDC), United Nations Children's Fund (UNICEF), United Nations Educational, Scientific and Cultural Organization (UNESCO) and Joint United Nations Programme on HIV/AIDS (UNAIDS) undertook a joint initiative, the Global School-based Student Health Survey (GSHS) to generate representative data on schoolgoing adolescents *(14).* GSHS data can be used to develop policies, determine priorities, and establish and evaluate programmes to protect and promote the health of the youth and future generations.

This report presents the results from the first-ever Bangladesh GSHS done in 2014. The survey aimed to generate nationally representative data on various health behaviours, such as diet, tobacco use, physical activity, hygienic behaviour, interpersonal violence, mental health and substance abuse among secondary school students aged 13–17 years.

2. Methods

The GSHS is a global survey using a standardized methodology for sample selection and standardized questionnaire modules developed under the GSHS initiative. The survey is administered during one regular class period. The GSHS uses anonymous reporting through a self-administered questionnaire in a representative sample of schools. It is difficult to obtain accurate data from adolescents during in-person household surveys, as adolescents may not respond accurately to questions, especially on certain behaviours that are considered social taboos. Hence, anonymous self-reported surveys may provide better results. In addition, using schools as the sampling unit rather than households reduces the survey costs substantially and affords more privacy for anonymous reporting. However, this strategy misses out-of-school youth, among whom the prevalence of risk factors may be different. In Bangladesh, almost 22% of adolescents are estimated to be out of school *(15)* and this may affect the generalizability of the results to this subgroup of the population.

The Ministry of Health and Family Welfare assigned a data coordinator to implement the survey. WHO and CDC trained the data coordinator and one school health official in 2013 in Hua Hin, Thailand, along with other participating country officials. The Ministry of Education provided the necessary support to carry out data collection.

2.1 Sampling of schools

The main schooling system in Bangladesh is in Bengali and run by the education boards. In addition, there are some English-medium schools providing O- and A-level education, and Islamic religious schools known as *madrashas*. It was difficult to obtain accurate statistics of the English-medium schools and *madrashas*. Therefore, the survey sampled only Bengali-medium schools. The Ministry of Education provided a complete list of schools, classes and number of students. In Bengali medium, the secondary level comprises classes 6–10. Students in classes 6–10 are generally aged 12–17 years. The survey was done among students of classes 7–10, aged 13–17 years, enrolled in Bengali-medium schools.

The survey employed a two-stage cluster sample design to produce a nationally representative sample – at school level and at class level.

Selection of schools. All Bengali-medium schools containing classes 7, 8, 9 and 10 were included in the sampling frame. Schools were selected systematically with probability proportional to enrolment in classes 7, 8, 9 and 10. Sixty-three schools were selected for data collection. The locations of the schools are shown in the map of Bangladesh (Appendix 1).

Selection of classes. All classes in grade 7, 8, 9 and 10 in the sampled schools were included in the sampling frame. Systematic equal probability sampling was used to select classes from each school that participated in the survey.

Selection of students. The GSHS's usual practice is to include at least 2500 students aged 13–17 years for a ±5% margin of error to obtain an overall estimate. However, considering an expected response rate of 80%, the estimated sample size was increased to 3180.

2.2 Questionnaire and its administration

The English questionnaire (Appendix 2) was self-administered and consisted of a total of 80 core, expanded and country-specific questions. The Bengali version of the questionnaire was used in the survey. There were several recall periods such as 7 days, 30 days, past year and within the school year for the different questions (Appendix 3). The questionnaire addressed the following topics:

(1) Behavioural risk factors: dietary behaviours, physical activity and personal hygiene;

(2) Substance and drug use: tobacco, alcohol and drug use;

(3) Physical violence and injuries: physical violence, bullying, serious injuries;

(4) Mental health and social relationships: mental health (feeling of loneliness, suicidal thoughts) and relationship with parents, friends, schoolteachers; and

(5) Sexual behaviour: sexual behaviours, knowledge of HIV infection or AIDS.

2.3 Implementation of the survey and response rate

A training manual was developed for data collectors. A team of trainers led by the research coordinator at the National Centre for Control of Rheumatic Fever and Heart Diseases (NCCRF&HD) trained the data collectors. For data collection, 63 schools were divided into 10 zones. A total of six data collection teams were recruited, each comprising two data collectors. One field coordinator was appointed for overall supervision of data collection. For conducting the survey, an agreement was made with all the school management teams. An authorization letter was obtained from the Ministry of Health and Family Welfare and the Ministry of Education before visiting the schools. Data collection took place between 1 October 2014 and 30 November 2014.

Out of 63 schools, two schools could not participate due to ongoing school examinations. A total of 2989 students participated. The school response rate was 97%, the student response rate was 94% and overall response rate was 91%.

2.4 Data management and analyses

Students were asked to fill in the intended circles on the answer sheets (optical character recognition [OCR] form). After completion of the survey, the OCR answer sheets were sent to CDC, where these were scanned and responses imported into a database. CDC carried out the necessary cleaning (for inconsistencies and missing responses) and weighting (to adjust for non-response and varying probabilities of selection) of the dataset. All prevalence estimates (and their confidence intervals [CIs]) presented in the report are weighted. Ninety-five per cent CIs were used to compare significant differences in prevalence by age, sex and class of students.

3. Results

The results are presented as basic tabulations for the key indicators under each module by sex (male and female) and age. As the sampling inclusion criteria were based on class level and not on age, the age of sampled students varied from under-12 to over-18 years. For the sake of uniformity and comparison, the results in the following sections are presented for the age group 13–17 years, though the tables in **Appendix 5** provide results for under-12 and over-18 years as well and also provide disaggregated data by class level.

Table 1 provides the demographic characteristics of the sampled students in the survey.

Table 1: Demographic characteristics of the sampled students in the survey

	Males		Female		Total		Missing
Age (years)	*N*	(%)	*N*	(%)	*N*	(%)	
12 or younger	11	0.8	93	1.8	104	2.6	0
13–15	1045	57.2	1609	31.8	2657	89.0	3
16–17	134	7.2	86	1.2	221	8.5	1
18 and older	0	–	0	–	–	–	0
Missing	2	–	0	–	7	–	5
Grade							
Class 7	266	20.1	591	11	859	31.2	2
Class 8	133	17.0	194	8.8	328	25.8	1
Class 9	658	14.2	819	7.6	1478	21.8	1
Class 10	131	14.0	173	7.2	305	21.2	1
Missing	4	–	11	–	19	–	4
Total	**1192**	**100**	**1788**	**100**	**2989**	**100**	**9**
Total (13–17 years)	**1179**	**64.4**	**1695**	**33**	**2878**	**97.4**	**4**

3.1 Lifestyle factors

3.1.1 Diet and nutrition

Nutritional deficiencies (protein–energy malnutrition, vitamins and different micronutrient deficiencies) as a result of either food insecurity or inappropriate dietary habits affect adolescents' overall development and their learning. In addition, changing dietary habits (e.g. increased consumption of sugary drinks, fast food) is leading to problems of overweight and other associated NCD risk factors. Overweight acquired during childhood or adolescence may persist into adulthood and increase the risk for hypertension, coronary heart disease, diabetes, gallbladder disease, some types of cancer and osteoarthritis of the weight-bearing joints later in life *(16).* Fruits and vegetables are good sources of complex carbohydrates, vitamins, minerals and other substances important for good health. Dietary patterns that include a higher intake of fruits and vegetables are associated with several health benefits, including a decreased risk for some types of cancers *(17).*

Hence, assessment of the dietary behaviours of adolescents is important for informing the formulation of appropriate youth- and school health policies, and to check the rising prevalence of NCDs. The survey assessed the prevalence of hunger, and the consumption of fruits and vegetables, carbonated drinks and fast food. In addition, anthropometric measurements (height and weight) were done for all students to assess body mass index (BMI).

Nutritional status

Nutritional status was assessed by measuring the BMI (kg/m2) based on measured weight (in kg) and height (in meters). Students whose BMI was

Percentage of students (13–17 years) who:

♦ went hungry	12.9
♦ consumed fruit ≥2 times a day	22.2
♦ took carbonated drinks ≥1 times a day	47.3
♦ ate fast food ≥2 days a week	37.1
♦ were overweight	8.6
♦ were obese	1.1

less than –2 standard deviation (SD) from the median for BMI by age and sex were classified as underweight. Students whose BMI was more than +1 SD from the median for BMI by age and sex were defined as overweight, whereas students whose BMI was more than +2 SD from the median for BMI by age and sex were defined as obese.

Bangladesh exhibited a double burden of malnutrition, with almost 14% being underweight and nearly 9% overweight and 1% obese. No significant differences were observed by sex and age (Table 2).

Table 2. Nutritional status and key dietary behaviours among students 13–17 years of age in Bangladesh, GSHS 2014

	Under-weight[a]	Over-weight[b]	Obese[c]	Went hungry[d]	Fruits ≥ 2 times/day[d]	Vegeta-bles ≥3 times/day[d]	Carbonat-ed drinks ≥1 times/day[d]	Fast food ≥2 days/week)[e]
Gender	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Male	15.7	9.6	0.8	11.8	23.1	31.6	47.5	41.1
Female	10.6	6.8	1.6	15.1	20.6	32.5	46.7	29.8
Age (years)								
13–15	14.3	9.1	1.2	13.1	23.1	32.5	48.0	37.1
16–17	10.0	4.2	0.5	10.2	12.0	24.8	40.9	37.9
***Total* (13–17)**	**13.9**	**8.6**	**1.1**	**12.9**	**22.2**	**31.8**	**47.3**	**37.1**

[a] <–2 SD from median for BMI by age and sex; [b] >+1 SD from median for BMI by age and sex; [c] >+2 SD from median for BMI by age and sex; [d] During the 30 days before the survey; [e] During the 7 days before the survey.

Overall, 12.9% of students reported that they went hungry "most of the time or always" because there was not enough food in their home. This corroborates with the high rate of undernutrition reported earlier. No significant differences were noted, however, by sex, age and class grades (Table 2).

Dietary habits

This survey found a very low consumption of fruits and vegetables among students. Only 22.2% of students reported usually eating fruits two or more times per day with no significant differences by sex (Table 2). Almost one

third (31.8%) of the students reported usually eating vegetables three or more times per day (Table 2). This finding is of concern, as fruit and vegetable consumption may decrease further with increasing urbanization. Almost half (47.3%) of the students drank carbonated soft drinks one or more times per day (Table 2). More than one third (37.1%) of them ate food from fast food restaurants two or more times per day (Table 2).

3.1.2 Physical activity

Participating in adequate physical activity throughout the lifespan and maintaining a normal body weight are the most effective ways of preventing many chronic diseases, including cardiovascular disease and diabetes. Adequate physical activity also helps to build healthy bones and muscles, reduces blood pressure and obesity and promotes psychological well-being *(18).* Diabetes now occurs during adolescence and childhood. Therefore, regular physical activity should be encouraged from childhood, as patterns of physical activity acquired during childhood and adolescence are more likely to be maintained throughout the lifespan *(19).*

Overall, less than half (41.4%) of the students were physically active for a total of at least 60 minutes per day on all seven days during the seven days before the survey, with no significant differences by age (Table 3). However, Class 9 students were significantly more physically active (60.5%) than students of the other classes (Appendix 5).

Percentage of students (13–17 years) who:

♦ were not physically active for at least 60 min/day on any day during the week	24.4
♦ were physically active for at least 60 min on all 7 days/week	41.4
♦ spent ≥3 hours/day doing sitting activities	15.3
♦ did not walk or ride a bike to school	31.0
♦ attended physical education classes ≥3 days/week	49.4

Only half (49.4%) of the students reported attending physical education classes on three or more days each week (Table 3). The percentage of students who attended physical education classes was significantly higher among students of class 10 (65.0%) compared to students of class 7 (39.2%) and class 9 (38.6%) (Appendix 5).

Sitting for a long duration is considered to be equivalent to smoking in terms of adverse health effects *(20).* Overall, 15.3% of students spent three or more hours per day doing sitting activities (proxy for sedentary life style) during a typical day, with no significant differences by sex, age or class level. Students 13–15 years of age were as likely as those 16–17 years of age to spend three or more hours per day doing sitting activities (Table 3).

Table 3. Patterns of physical activity among students 13–17 years of age in Bangladesh, GSHS 2014

	Not physically active for at least 60 min per day during one week [a]	Physically active at least 60 minutes per day on all 7 days [a]	Did not walk /ride a bicycle [a]	Spent ≥3 hours sitting	Attended physical education classes ≥3 days each week
Gender	(%)	(%)	(%)	(%)	(%)
Male	21.1	42.0	26.7	17.0	50.9
Female	30.9	40.2	39.3	11.9	46.7
Age (years)					
13–15	25.2	41.2	31.6	15.0	48.4
16–17	16.2	43.0	24.1	19.0	59.9
Total (13–17)	**24.4**	**41.4**	**31.0**	**15.3**	**49.4**

[a] During the 7 days before the survey.

3.1.3 Personal hygiene and oral health

Dental caries affect between 60% and 90% of children in developing countries. Tooth decay is the most prevalent oral disease among children in several Asian countries. The incidence of dental caries is expected to rise drastically in the near future due to increased sugar consumption and inadequate fluoride exposure *(21).* In addition to causing pain and discomfort, poor oral health

can affect children's ability to communicate and learn. More than 50 million school hours are lost annually because of oral health problems around the globe *(22).* In both developed and developing countries, many children do not have access to fluoridated water or professional dental care. Daily tooth cleaning or brushing can help prevent dental diseases to some extent. *(23).*

Oral hygiene

Overall, 87.1% of students reported usually cleaning or brushing their teeth one or more times per day (Table 4). No significant differences in the percentage of students who usually cleaned or brushed their teeth one or more times per day were found by age and class grades.

Handwashing behaviours

Hygiene education and promotion of handwashing can reduce the number of diarrhoeal cases by 45% *(24)*, which still claims 2 million children's lives each year globally. About 400 million school-aged children are infected with worms worldwide. These parasites consume nutrients from infected children, causing abdominal pain and malfunction, and impairing learning by slowing cognitive development *(25).*

Percentage of students (13–17 years) who never or rarely:

♦ clean or brush teeth:	12.9
♦ wash hands before meals:	2.9
♦ wash hands after using toilet:	2.0
♦ use soap for handwashing:	5.6

Overall, only 2.9% of students never or rarely washed their hands before eating. Less than 1% of the students 16–17 years of age never or rarely washed their hands before eating compared to 3.2% students 13–15 years of age. However, the differences by age and sex were not statistically significant (Table 4). Almost similar results were observed for washing hands after using the toilet or latrine (Table 4) and using soap for washing their hands (Table 4). Overall, 87.9% of the students said that they had been taught in any of their classes how to avoid worm infections during this school year (Table 4).

Table 4. Hygiene among students 13–17 years of age in Bangladesh, GSHS 2014

	Clean or brush teeth[a]	Never or rarely washed their hands before eating[a]	Never or rarely washed their hands after using the toilet or latrine[a]	Never or rarely used soap when washing their hands[a]	Taught in any of their classes how to avoid worm infections
Gender	(%)	(%)	(%)	(%)	(%)
Male	84.8	2.8	2.3	6.9	87.0
Female	91.4	3.3	1.5	2.9	89.9
Age (years)					
13–15	87.6	3.2	1.9	5.0	87.9
16–17	81.1	0.7	3.4	11.5	88.9
***Total* (13–17)**	**87.1**	**2.9**	**2.0**	**5.6**	**87.9**

[a] During the 30 days before the survey.

Oral health

Overall, 73.2% and 75.4% of the students described the health of their teeth and gums, respectively, as either excellent, very good or good, with no significant difference by sex (Tables 5). About 15% of the students reported missing school because of a toothache, with no significant differences by sex or age. Students of class 8 (14.3%) and class 10 (22.7%) were significantly more likely than students of class 9 (8.6%) to miss the school because of a toothache (Appendix 5). Less than one in ten (7.5%) students visited a dentist two or more times during the 12 months before the survey (Table 5).

3.2 Tobacco, alcohol and substance abuse

Most of the current users of tobacco, alcohol and drugs often initiate use in the early adolescent years, sometimes just out of curiosity or under peer pressure, and then go on to become regular users.

The use of tobacco, alcohol and drugs not only has an adverse impact on the users but also on their families and communities. It is important to prevent adolescents from initiating use as quitting later is much more difficult

and resource intensive. GSHS used six questions on cigarettes and tobacco use, six questions on alcohol use and four questions on drug use to assess the prevalence and patterns of use, age at initiation and other contextual circumstances around use. The following sections describe the results from GSHS 2014 on tobacco, alcohol and drug use.

Table 5. Oral health among students 13–17 years of age in Bangladesh, GSHS 2014

	Used a toothbrush most often to clean their teeth or gums	Described health of their teeth as excellent, very good or good	Described health of their gums as excellent, very good or good	Missed school because of a toothache[a]	Who went to the dentist[b]
Gender	(%)	(%)	(%)	(%)	(%)
Male	67.3	72.9	75.6	15.5	8.8
Female	76.8	73.9	75.2	13.7	4.8
Age (years)					
13–15	71.3	73.0	75.0	14.7	7.1
16–17	63.1	75.8	79.7	19.2	11.8
***Total* (13–17)**	**70.6**	**73.2**	**75.4**	**15.1**	**7.5**

Notes:*Differences across groups are statistically significant at 95% level. [a] During the 12 months before the survey; [b] Two or more times during the 12 months before the survey.

3.2.1 Tobacco use

Smokers have a markedly increased risk of multiple cancers, particularly lung cancer, and are at far greater risk of heart disease, stroke, emphysema and many other fatal and non-fatal diseases. Similarly, cancer of the lip, tongue and mouth are highly associated with tobacco chewing. Children are also at risk from exposure to second-hand smoke from an adult's smoking, and have a higher risk of pneumonia and bronchitis, worsening of asthma, middle ear disease, and possibly neurobehavioural impairment and cardiovascular disease in adulthood. Many studies show that parental smoking is associated with higher youth smoking *(26).* Bangladesh has a dual problem of high tobacco production and high tobacco use. Further, there is a problem of dual use of tobacco (smoking and smokeless) *(27).*

Percentage of students (13–17 years) who:	
♦ currently smoke:	7.7
♦ are exposure to second-hand smoke:	35.0
♦ have parent/guardian who uses tobacco:	30.1
♦ drank alcohol so that they got drunk:	1.3
♦ used marijuana:	1.6
♦ used amphetamines:	1.9

About half of the smokers begin smoking before they reach adulthood. The national tobacco prevalence survey in Bangladesh (GATS 2009) observed that more than six in 10 smokers aged 20–34 years started smoking daily before they reached the age of 20 years, with the average age at daily smoking initiation being 18.8 years. Two rounds of nationwide youth tobacco surveys done in Bangladesh in 2007 and 2013 as part of the Global Youth Tobacco Survey (GYTS) Initiative among students aged13–15 years enrolled in grades 7–9 reported a similar overall tobacco-use prevalence of 6.9%, with much higher use among boys. The Bangladesh GYTS (2013) reported a prevalence of 2.9% for tobacco smoking and 4.5% for smokeless tobacco use among students 13–15 years of age.

Prevalence of tobacco use

Overall in Bangladesh, 9.8% of students used tobacco (any form of smoking or smokeless) on one or more days. As expected, boys were significantly more likely to consume tobacco than girls (13.8% versus 2.0%) (Table 6).

Overall, 7.7% students reported that they currently smoked cigarettes. Similar to overall tobacco use, cigarette smoking was more in boys (Table 6). Six per cent of students reported using tobacco products other than cigarettes on at least one day (Table 6).

Exposure to second-hand smoke

Overall, 35% of students reported that people smoked in their presence. A much higher proportion of older students reported this exposure: 56.3% of students 16–17 years of age compared to 32.9% of students 13–15 years

of age (Table 6). A much lower proportion (19.3%) of class 7 students reported this exposure compared to students of other classes (Appendix 5). A significantly higher proportion of boys reported exposure to second-hand smoke than girls (40.3% versus 24.3%) (Table 6).

Parents' or guardian's tobacco use

Overall, 30.1% of students reported having a parent or guardian who used any form of tobacco, with no significant differences by age or class level. However, a much higher proportion of boys reported the use of tobacco by one or both parents compared to girls (35% versus 20.3%) (Table 6).

Table 6. Patterns of tobacco use among students 13–17 years of age in Bangladesh, GSHS 2014

	Currently use any tobacco product other than cigarettes[a]	Currently smoke cigarettes[b]	Tried a cigarette before age 14[c]	Currently use any tobacco product[b]	Exposure to second-hand smoke[d]	Parents use any form of tobacco
Gender	(%)	(%)	(%)	(%)	(%)	(%)
Male	8.4	11.0	80.5	13.8*	40.3*	35.0*
Female	1.6	1.5	-	2.0	24.3	20.3
Age (years)						
13–15	6.3	7.0	89.4	9.2	32.9*	29.3
16–17	4.0	15.2	-	16.0	56.3	38.3
***Total* (13–17)**	**6.1**	**7.7**	**80.9**	**9.8**	**35.0**	**30.1**

Notes: *Differences across groups are statistically significant at 95% level. [a] On at least 1 day during the 30 days before the survey, and includes tobacco products other than cigarettes; [b] On at least 1 day during the 30 days before the survey; [c] Among students who ever smoked cigarettes; [d] On one or more days during the 7 days before the survey people smoked in their presence; - Fewer than 100 students in this subgroup.

3.2.2 Alcohol use

Worldwide, alcohol use causes 3% of all deaths (1.8 million) annually. Besides the direct effects of intoxication and addiction, alcohol use causes about 20–30% of oesophageal cancer, liver disease, homicide and other intentional injuries, epilepsy and motor vehicle accidents worldwide *(28).* Heavy alcohol use places one at greater risk for cardiovascular disease *(29).* In most countries,

alcohol-related mortality is highest among the age group of 45–54 years, but the relationship between the age at initiation of alcohol use and the pattern of its use and abuse in adulthood makes the study of alcohol consumption among adolescents important *(30)*.

Unintentional injuries are the leading cause of death among those aged 15–25 years and many of these injuries are related to alcohol use *(31)*. Young people who drink alcohol are more likely to use tobacco and other drugs and engage in risky sexual behaviour than those who do not drink *(32,33)*. Problems with alcohol use can impair adolescents' psychological development and negatively influence both the school environment and leisure time *(34)*.

Age at initiation and prevalence of alcohol use

Some of the students (1.6%) reported that they had drunk at least one alcoholic drink during the past 30 days. The prevalence in boys (2.4%) was significantly higher than in girls (0.1%) (Table 7).

Drunkenness and consequences of drinking

During their lifetime, 1.3% of students overall reported drinking so much alcohol that they were really drunk one or more times. Only boys reported being drunk, with no girl reporting getting drunk during their lifetime (Table 7).

Overall, 1.2% of students reported getting into trouble with their family or friends, missing school, or getting into fights one or more times as a result of drinking alcohol, with no significant variations by age and grade (Table 7).

Table 7. Patterns of alcohol use among students 13–17 years of age in Bangladesh, GSHS 2014

	Currently drink alcohol[a]	Drank 2 or more drinks per day[b]	First drank alcohol before age 14[c]	Ever heavy drunk[d]	Got into trouble or fights as a result of alcohol use[d]
Gender	(%)	(%)	(%)	(%)	(%)
Male	2.4	–	–	2.0	1.9
Female	0.1	–	–	0.0	0.0

	Currently drink alcohol[a]	Drank 2 or more drinks per day[b]	First drank alcohol before age 14[c]	Ever heavy drunk[d]	Got into trouble or fights as a result of alcohol use[d]
Age (years)					
13–15	1.4	–	–	1.2	1.2
16–17	4.1	–	–	3.2	1.7
***Total* (13–17)**	**1.6**	**–**	**–**	**1.3**	**1.2**

[a] At least one drink of alcohol on at least one day during the 30 days before the survey; [b] On the days they drank alcohol among students who drank alcohol during the 30 days before the survey; [c] For the first time among students who ever had a drink of alcohol other than a few sips; [d] One or more times during their life; - Fewer than 100 students in this subgroup.

3.2.3 Substance abuse

Drug abuse is a significant threat to the health, social and economic structure of families, communities and nations. The number of drug users worldwide is estimated to be about 185 million *(35)*. Drug abuse has been identified by WHO as one of the three major health risks that can lead to devastating health consequences for adolescents. Substance abuse can lead to illness and even death, and is also related to unsafe sex and accidents, violence and loss of productivity.

In the current study, 1.6% students reported using marijuana, with no significant differences by age and sex of students (Table 8). Lifetime use of amphetamine or methamphetamine was 1.9% (Table 8).

Table 8. Patterns of drug use among students 13–17 years of age in Bangladesh, GSHS 2014

	Currently use marijuana[a]	Ever used marijuana[b]	Ever used amphetamines or methampheta-mines[b]	Used drugs first time before age 14 years[c]
Gender	(%)	(%)	(%)	(%)
Male	2.2	2.1	2.5	–
Female	0.5	0.4	0.6	–

	Currently use marijuana [a]	Ever used marijuana[b]	Ever used amphetamines or methamphetamines [b]	Used drugs first time before age 14 years [c]
Age (years)				
13–15	1.6	1.4	1.7	–
16–17	2.7	3.2	4.1	–
Total (13–17)	**1.7**	**1.6**	**1.9**	**–**

[a] One or more times during the 30 days before the survey; [b] One or more times during their life; [c]Among students who ever used drugs.

3.3 Mental health, violence and injury

Worldwide, approximately 20% of children and adolescents suffer from a disabling mental illness. Some of the most common mental health problems among adolescents include anxiety disorders, depression and other mood disorders, and behavioural and cognitive disorders. Half of all lifetime cases start by the age of 14 years and three fourths by the age of 24 years *(36).* Suicide is the third leading cause of death among adolescents *(37, 38).* Worldwide, about 4 million adolescents attempt suicide each year. Most of the young people suffer needlessly, unable to get diagnosed, supported and treated. These young people are at risk for abuse and neglect, alcohol and other drug use, suicide, failure in school, engagement in violent and criminal activities, and continuing mental illness in adulthood.

Mental illness has also been identified as an important public health issue among Bangladeshi children and adolescents. A study done in Dhaka division reported a prevalence of 18% in children *(39).* To assess the overall mental health status of adolescents, the current survey elicited feelings of loneliness, worry, contemplating/attempting suicide and social relationships.

3.3.1 Suicidal behaviour

According to the WHO report *Preventing suicide: a global imperative* published in 2014, suicide deaths in Bangladesh accounted for 10 167 or 1.40% of total deaths *(40).* The age-adjusted death rate is 7.63 per 100 000 population.

The current survey observed that nearly one in 20 (4.9%) students seriously considered attempting suicide, with no significant variation by age and sex (Table 9).

3.3.2 Feeling lonely/worrying

Being liked and accepted by peers is crucial to young people's health development. Those who are not socially integrated are more likely to exhibit difficulties with their physical and emotional health. Isolation from peers in adolescence can lead to feelings of loneliness and adverse psychological symptoms. Interaction with friends tends to improve social skills and strengthen the ability to cope with stressful events. Hence, the study elicited feelings of feeling lonely/worrying, and enquired about friendship among adolescents.

Eleven per cent of students reported feeling lonely most of the time or always, with no significant difference by sex (Table 9). This corroborates well with 8.2% of the students reporting that they had no close friends (Table 9).

Percentage of students (13–17 years) who:

- were lonely: 11.0
- were always worried: 4.7
- considered attempting suicide: 4.9
- had no close friend: 8.2

In addition, 4.7% of the students reported feeling worried most of the time or always about something such that they could not sleep at night. No significant differences were observed by sex or age (Table 9).

3.3.3 Missing classes and school experience

Adolescents who have a positive relationship with teachers and positive attitudes towards school are less likely to use substances and less likely to experience depression.

Frequent missing of classes is a signal for an unfavourable environment in the school, dislike or illness of students. Almost one third (31.0%) of the students missed classes or school without permission on one or more days,

with no significant difference by age (Table 9). However, a much higher proportion (48.2%) of class 9 students reported missing classes compared to students in the other classes (Appendix 5).

Table 9. Mental health of students 13–17 years of age in Bangladesh, GSHS 2014

	Attempted suicide[a]	Seriously considered attempting suicide[a]	Made a plan to attempt suicide[a]	Worried so much that could not sleep[b]	Felt lonely [b]	Did not have any close friends	Missed classes without permission [c]	Reported most students in their school kind and helpful[d]
Gender	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Male	6.9	4.4	7.5	4.4	11.7	6.7	31.7	55.6
Female	6.0	5.8	7.3	5.1	9.4	11.4	29.7	57.0
Age (years)								
13–15	7.0	4.8	7.7	4.5	10.9	8.6	30.7	55.4
16–17	4.3	5.4	5.6	7.1	11.7	4.8	34.5	63.2
Total (13–17)	**6.7**	**4.9**	**7.5**	**4.7**	**11.0**	**8.2**	**31.0**	**56.1**

[a] One of more times during the 12 months before the survey; [b] Most of the times or always during the 12 months before the survey; [c] On one of more days during the 30 days before the survey; [d] Most of the time or always during the 30 days before the survey.

3.3.4 Parental engagement

Adolescents who live in a social environment that provides meaningful relationships, encourages self-expression and also provides structure and boundaries are less likely to initiate sex at a young age, less likely to experience depression and use substances. Parental bonding and connection is associated with lower levels of depression and suicidal ideation, alcohol use, sexual risk behaviours and violence *(41)*. The survey assessed the perceived parental engagement using a series of eight questions.

Healthy parental engagement with adolescents seems to be a concern for students in Bangladesh. Less than half of all students reported that their parents or guardians, most of the time or always, understood their problems and worries (47.2%) or really knew what they were doing (42.9%) (Table 10).

Parental engagement – percentage of students (13–17 years) who reported that their parents most of the time or always:

- understood their problems & worries 47.2
- really knew what they were doing with their free time 42.9
- checked to see if their homework was done 54.0
- spent time with them 49.6
- gave them money 50.8
- went through their things without their approval* 84.5

Table 10. Levels of parental engagement among students 13–17 years of age in Bangladesh, GSHS 2014

	Parents knew what they were doing with their free time [a]	Parents understood their problems and worries [a]	Parents checked to see if their homework was done [a]	Parents never or rarely went through their things without their approval [b]	Parents spent time with them[a]	Parents gave them money [a]	Parents never or rarely embarrassed them in public or in front of friends [a]	Parents never or rarely ignored them [a]
Gender	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Male	39.9	43.3	52.9	82.4	43.9*	47.5	88.5	92.9
Female	48.7	54.8	56.2	88.7	61.1	57.4	84.0	96.4
Age (years)								
13–15	43.1	47.2	53.6	85.6	49.2	51.8	86.8	94.1
16–17	40.7	47.7	58.9	72.8	53.5	41.0	88.2	93.5
Total (13–17)	42.9	47.2	54.0	84.5	49.6	50.8	86.9	94.0

Notes: *Differences across groups are statistically significant at 95% level. [a] Most of the time or always during the 30 days before the survey; [b] Never or rarely during the 30 days before the survey.

3.4 Violence and injury

Injuries, intentional or unintentional, have become a major health concern in Bangladesh. Adolescents are more prone to injury, intentional or unintentional, than their older counterparts *(42).* Unintentional injuries are a major cause of death and disability among young children. Worldwide,

about 875 000 children under the age of 18 years die each year from injuries and 10–30 million have their lives affected by injury. Many injuries lead to permanent disability and brain damage, depression, substance abuse, suicide attempts and the adoption of health risk behaviours *(43).* A recent study from rural Bangladesh reported a 6.3% annual prevalence of injuries that hampered at least one day's work *(44).*

Percentage of students (13–17 years) reporting:

- serious injury: 43.8
- broken bone or dislocated joint: 11.2
- physical attack: 63.7
- girls being physically attacked: 55.5
- Bullied: 24.6

3.4.1 Serious injuries

The survey assessed the prevalence of "serious injury". An injury is defined as serious when it makes the person miss at least one full day of usual activities (such as school, sports or a job) or requires a treatment by a doctor or nurse. More than four in 10 students (43.8%) reported being seriously injured. Out of these, 11.2% of the students reported that their most serious injury was a broken bone or dislocated joint (Table 11).

Intentional injuries

Intentional injury in schools reflects a prevailing deteriorating psychosocial school environment. The survey asked two questions to assess this aspect: in the past 12 months, how many times was a student physically attacked; and how many times were they in a physical fight?

A staggering proportion of 67.7% of boys and 55.5% of girls were physically attacked one or more times. These proportions are high, particularly for girls, considering the sociocultural environment in Bangladesh (Table 11). More than one in five (22.3%) students reported being in a physical fight with another student(s) during the past 12 months. A significantly lower proportion of girls (10.4%) reported being in physical fight than boys (28.4%) (Table 11).

3.4.2 Bullying in schools

Victims of bullying have increased stress and a reduced ability to concentrate, and are at increased risk for substance abuse, aggressive behaviour and suicide attempts. The survey assessed the reported prevalence of bullying and how the students were bullied in the past 30 days.

Overall, 24.6% of students reported being bullied. A significantly higher proportion of boys (28.1%) reported being bullied compared to girls (17.5%) (Table 11).

Table 11. Violence and injuries among students 13–17 years of age in Bangladesh, GSHS 2014

	Students who were physically attacked [a]	Students who were in a physical fight [a]	Students who were seriously injured [a]	Serious injury was a broken bone or dislocated joint [b]	Students who were bullied [c]
Gender	(%)	(%)	(%)	(%)	(%)
Male	67.7*	28.4*	47.4	13.8*	28.1*
Female	55.5	10.4	36.2	4.0	17.5
Age (years)					
13–15	62.5	21.1*	43.5	11.3	23.6
16–17	76.0	34.8	46.8	-	34.2
Total (13–17)	**63.7**	**22.3**	**43.8**	**11.2**	**24.6**

Notes: *Differences across groups are statistically significant at 95% level. [a] One or more times during the 12 months before the survey; b Among students who were seriously injured during the 12 months before the survey; [c] On one or more days during the 30 days before the survey; [d] among students who were bullied during the 30 days before the survey; – Fewer than 100 students in this subgroup.

3.5 Sexual behaviour and HIV/AIDS

School health programmes can help the youth to adopt lifelong attitudes and behaviours that support overall health and well-being, including behaviours that reduce unwanted pregnancy and other sexually transmitted infections (STIs). The health education system should include these subjects in the curriculum, which can prevent teenage pregnancy and STIs. The survey assessed current sexual practices (sexual intercourse, number of partners and use of condom

or other method of contraception) through five questions. In addition, the survey asked another four questions to assess students' knowledge of HIV infection and whether they were taught about it in class.

3.5.1 Sexual practices

About one in 10 students (9.4%) reported ever having had sexual intercourse (Table 12). Paradoxically, the percentage of students who reported ever having had sexual intercourse was significantly higher for students of class 9 (14.9%) compared to students of class 10 (4.1%). Similarly, girls in class 9 (1.3%) had a significantly lower percentage of ever having had sexual intercourse compared to those of class 8 (6.7%) (Appendix 5). These findings are difficult to explain and may need to be interpreted cautiously and have problems of validity, as this proportion should conceptually go up with the grade.

Almost half of the students (45.4%) who reported ever having had sexual intercourse had it before the age of 14 years. The survey did not elicit any information on whether the sexual intercourse was consensual or not. Of these students, 59.4% reported using a condom during the last sexual intercourse, and 68.1% reported using a birth control method other than a condom (Appendix 5).

Percentage of students (13–17 years old) who:

- had experience of sexual intercourse: 9.4
- had heard about HIV infection/AIDS: 78.6
- were taught about HIV infection/AIDS: 64.5
- were taught how to avoid HIV infection/AIDS: 66.0
- had ever talked with parents about HIV/ AIDS: 44.0

3.5.2 Knowledge of HIV infection or AIDS

Young people between the ages of 15 and 24 years are at high risk for HIV/ AIDS, accounting for more than half of those newly infected with HIV. Studies show that adolescents who begin sexual activity early are likely to have sex with more partners and with partners who have been at risk of HIV exposure and are not likely to use condoms. In many countries, HIV infection and AIDS is

reducing average life expectancy, overloading the health-care system, reducing economic growth and development, and reducing school enrolment and the availability of teachers *(45).*

STIs are among the most common causes of illness in the world and have far-reaching health consequences. They facilitate the transmission of HIV and, if left untreated, can lead to cervical cancer, pelvic inflammatory disease and ectopic pregnancy *(46).* Worldwide, the highest reported rates of STIs are found among people between 15 and 24 years; up to 60% of new infections and half of all people living with HIV globally are in this age group *(47).*

Overall, 78.6% students had ever heard of HIV infection or the disease called AIDS. Students aged 16–17 years (93.3%) were significantly more likely to have heard of HIV infection or AIDS than students aged 13–15 years (77.1%) (Table 12). The proportion of students who reported having heard about AIDS increased with age and class level of the students for both boys and girls. For example, a significantly higher proportion of boys aged 16–17 years (93.8%) reported having heard about AIDS than those aged 13–15 years of age (73.8%). A much higher percentage of class 9 students (93.0%) had heard of AIDS compared to those of class 7 (63.3%) and class 8 (74.4%) (Appendix 5).

About two thirds (64.5%) of the students reported being taught in any of their classes about HIV infection or AIDS (Table 12). This indicator improved with class level and age for both boys and girls. A significantly higher proportion (85.9%) of students 16–17 years of age reported being taught about HIV than students 13–15 years of age (62.4%) (Table 12). A similar pattern was seen for girls: a significantly higher percentage of class 9 (80.4%) and class 10 (78.6%) girls reported being taught about HIV than those of class 7 (48.7%) (Appendix 5).

Similarly, 66.0% were taught in any of their classes about how to avoid HIV infection or AIDS. This indicator also improved with age and class level. Compared to students of class 7 (54.5%), this was significantly higher among students of class 8 (74.0%). This percentage was significantly higher for girls of class 9 (79.5%) compared to those of class 7 (53.3%) (Table 12).

Less than half of the students (44.0%) reported that they had ever talked about HIV/AIDS with their parents. Talking about anything with parents that has a link to sex is taboo in Bangladesh. This rate was roughly equal over

the age and class grades of the students. No significant variations in these estimates over age and class grades were found for boys and girls (Table 12).

Table 12. Sexual behaviour and HIV/AIDS among students 13–17 years of age in Bangladesh, GSHS 2014

	Ever had sexual intercourse	Heard about HIV infection/ AIDS	Taught about HIV infection/ AIDS	Taught how to avoid HIV infection/ AIDS	Ever talk with parents about HIV/ AIDS
Gender	(%)	(%)	(%)	(%)	(%)
Male	12.5*	76.0*	62.0	63.3	38.2*
Female	3.7	83.4	69.5	71.8	55.2
Age (years)					
13–15	10.0	77.1*	62.4*	64.5	44.3
16–17	3.5	93.3	85.9	82.0	40.6
Total (13–17)	**9.4**	**78.6**	**64.5**	**66.0**	**44.0**

Notes: *Differences across groups are statistically significant at 95% level.

4. Discussion

The GSHS was conducted in Bangladesh for the first time. Similar data were collected in the past for tobacco though GYTSs in 2007 and 2013. This section discusses some key issues that emerged from this survey, which need the attention of the relevant programmes and policies.

4.1 Increasing prevalence of cigarette smoking

The survey methodology used in the GSHS is similar to that of the GYTS, which is conducted among students aged 13–15 years of age, though GSHS collects data on multiple risk factors while GYTS focuses mainly on tobacco use. A comparison of the prevalence of cigarette smoking from GYTS 2013 to the current survey shows a substantial increase in prevalence, from 2.1% (95% CI: 0.9–4.9) in GYTS 2013 to 7.0% (95% CI: 4.1–11.8) in the current survey. Although tobacco use has been declining in adults, these survey findings suggest an increase in tobacco-use prevalence compared to the GYTSs done in 2004, 2007 and 2013, all of which yielded an almost similar prevalence estimate of about 7.0% *(48).*

This is a matter of concern, as control of tobacco use among adolescents will be critical to overall tobacco control in the country. Tobacco control measures have to be customized for our youth.

4.2 Diet, nutrition and physical activity

Almost 31.5% of the population in Bangladesh lives below the national poverty line *(49)*. Hence, food security still remains a problem. More than one in 10 students (12.9%) in the current survey reported going hungry, with a rather high prevalence of underweight (13.9%). More importantly, this situation coexisted with a very high proportion of students being overweight (8.6%), a high reported consumption of carbonated drinks (47.3%) and fast food (52.9%), and low fruit and vegetable intake. The low fruit and vegetable intake was also noted in the WHO STEPs survey conducted in 2010 among the population aged 25 years and older *(50)*. Low consumption of fruits and

vegetables is not simply due to scarcity but may also be a question of choice as many Bangladeshis do not consider vegetables as a nutritious food and consider fruit as a food supplement for sick persons only *(51).* Vegetables and fruit need to be popularized and made available throughout the year through government support in storage, transportation, pricing, etc. The already high adolescent obesity noted in this study may continue to increase if trends in consumption of these unhealthy foods and low physical activity continue to rise. Many schools cannot and do not provide adequate facilities and the environment for being physically active.

4.3 Hygiene

Washing or brushing the teeth is universally practised. Although washing hands before eating is satisfactory, handwashing after using the toilet is still very poor; use of soap is poorer. Handwashing at critical moments can reduce nosocomial infections to a large extent. Schools should address these hygienic practices with improvement in infrastructure and focused health education messages around the importance of handwashing.

4.4 Mental health and psychosocial environment

A relatively high prevalence of drug use, a very high prevalence of physical attacks, fights and serious intentional injuries, and a high prevalence of suicidal thoughts suggests a deteriorating psychosocial environment in schools and the society as a whole. Specific actions must be taken by the Ministry of Education to address the high levels of reported bullying in the schools and overall psychosocial environment.

Only half of the students reported that their parents understood their problems and worries and less than half reported that their parents actually knew what they are doing with their free time. This shows low levels of parental engagement, which is shown to be protective against tobacco, alcohol and drug use as well as poor mental health outcomes. There is a need for establishing something like parent–teacher associations, which are functioning in some countries.

4.5 Limitations of the survey

As per UNICEF, about 20% of adolescents in Bangladesh are out of school. These out-of-school adolescents may be much more socioeconomically disadvantaged than in-school adolescents. The estimates given in this report may not reflect the actual situation for out-of-school adolescents in Bangladesh. Also, the sample excluded students going to English-medium schools and *madrashas*, so the results of the survey may not be generalizable to all students. The sample size used in this study could not provide disaggregated results by urban–rural residence, and there may be important differences among schoolgoing students in urban and rural areas.

5. Recommendations

Adolescents grow through an environment that is determined by a lot of actors and factors. The school environment, however, is largely controlled by the Ministry of Education. The Ministry of Health and Family Welfare can contribute to improving the health of adolescents by working with the Ministry of Education to provide accessible and acceptable preventive, promotive and curative school health services for adolescents, contributing to campaigns, curricula development, and advising on school policies to create a health-promoting environment for students. Therefore, Bangladesh should take appropriate measures through intersectoral collaboration by formulating and implementing school-based intervention programmes to improve the health of youth.

Specific recommendations are as follows:

1. Policy-related

    (a) Enforce the law on sale and use of tobacco/alcohol/drugs to minors and anyone else as applicable. Ensure 100% smoke-free schools and public environments.

    (b) Formulate a policy on schools and canteens so that they provide healthy food such as fruit, vegetables, and those that are low in salt, saturated fat, trans-fatty acids and free sugars; and provide safe, free, drinking water.

    (c) Restrict the marketing and sale of unhealthy foods and drinks to children, especially in and around the school premises, and a possible ban on sale of sugary drinks in school, if feasible.

    (d) Ensure a zero tolerance to bullying policy.

    (e) Update curricula on healthy eating guidelines for children, sex education, what to do about bullying, how to seek help if feeling lonely or contemplating suicide, and drug-use education.

2. Programme-related

(a) Establish effective networks of parents and teachers and school management committees to create a better psychosocial environment. This will help to create better psychological support for students not only in schools but also at home.

(b) Create a supportive school environment for students to develop healthy behaviours, especially on avoidance of tobacco, alcohol, drugs, violence and unsafe sex.

(c) Provide facilities and the environment for recreational physical activity and include physical activity classes in the school curriculum and class schedule.

(d) Provide soap and running water facilities to enable handwashing after using the toilet.

In order to keep a GSHS surveillance system in place, it is essential to repeat the survey every 4–5 years. This will enable the assessment of trends in health-related behaviours of Bangladeshi adolescent school students.

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Annex 1

Map of Bangladesh showing location of study schools for GSHS 2014

Annex 2

Questionnaire, Bangladesh GSHS, 2014

1. How old are you?
    - A. 11 years old
    - B. 12 years old
    - C. 13 years old
    - D. 14 years old
    - E. 15 years old
    - F. 16 years old
    - G. 17 years old
    - H. 18 years old or older

2. What is your sex?
    - A. Male
    - B. Female

3. In what grade are you?
    - A. Grade 7
    - B. Grade 8
    - C. Grade 9
    - D. Grade 10

The next 3 questions ask about your height, weight and going hungry.

5. How tall are you without your shoes on?

ON THE ANSWER SHEET, write your height in the shaded boxes at the top of the grid. Then fill in the oval below each number.

Example

Height (cm)		
1	5	3
0	0	0
	1	1
2	2	2
	3	
	4	4
		5
	6	6
	7	7
	8	8
	9	9
9	I do not know	

6. How much do you weigh without your shoes on? ON THE ANSWER SHEET, write your weight in the shaded boxes at the top of the grid. Then fill in the oval below each number.

Example

Weight (kg)		
0	5	2
		0
1	1	1
2	2	
	3	3
	4	4
		5
	6	6
	7	7
		8
	9	9
9	I do not know	

6. During the past 30 days, how often did you go hungry because there was not enough food in your home?

   A. Never
   B. Rarely
   C. Sometimes
   D. Most of the time
   E. Always

The next 4 questions ask about what you might eat and drink.

7. During the past 30 days, how many times per day did you usually eat fruit, such as bananas, guava, mango, pineapple, apples, oranges, jack-fruit, boroi, or amra?

   A. I did not eat fruit during the past 30 days
   B. Less than one time per day
   C. 1 time per day
   D. 2 times per day
   E. 3 times per day
   F. 4 times per day
   G. 5 or more times per day

8. During the past 30 days, how many times per day did you usually eat vegetables, such as potatoes, potol, cauliflower, cabbage, beans, brinjal, ladies finger, or chichinga?

   A. I did not eat vegetables during the past 30 days
   B. Less than one time per day
   C. 1 time per day
   D. 2 times per day
   E. 3 times per day
   F. 4 times per day
   G. 5 or more times per day

9. During the past 30 days, how many times per day did you usually drink carbonated soft drinks, such as Coke, Fanta Orange, or 7-Up? (Do not include diet soft drinks.)

   A. I did not drink carbonated soft drinks during the past 30 days
   B. Less than one time per day

C. 1 time per day
D. 2 times per day
E. 3 times per day
F. 4 times per day
G. 5 or more times per day

10. During the past 7 days, on how many days did you eat food from a fast food restaurant, such as KFC, BFC, or Pizza Hut?

A. 0 days
B. 1 day
C. 2 days
D. 3 days
E. 4 days
F. 5 days
G. 6 days
H. 7 days

The next 4 questions ask about what you were taught in class during the school year.

11. During this school year, were you taught in any of your classes the benefits of healthy eating?

A. Yes
B. No
C. I do not know

12. During this school year, were you taught in any of your classes the benefits of eating more fruits and vegetables?

A. Yes
B. No
C. I do not know

13. During this school year, were you taught in any of your classes healthy ways to gain weight?

A. Yes
B. No
C. I do not know

14. During this school year, were you taught in any of your classes healthy ways to lose weight?

    A. Yes
    B. No
    C. I do not know

The next 11 questions ask about cleaning your teeth and washing your hands.

15. During the past 30 days, how many times per day did you usually clean or brush your teeth?

    A. I did not clean or brush my teeth during the past 30 days
    B. Less than 1 time per day
    C. 1 time per day
    D. 2 times per day
    E. 3 times per day
    F. 4 or more times per day

16. Which of the following do you use **most often** to clean your teeth or gums?

    A. Toothbrush
    B. Wooden toothpicks
    C. Plastic toothpicks
    D. Dental floss or thread
    E. Charcoal
    F. Chew stick or datun
    G. Something else

17. How would you describe the health of your teeth?

    A. Excellent
    B. Very good
    C. Good
    D. Average
    E. Poor
    F. Very poor

18. How would you describe the health of your gums?

    A. Excellent
    B. Very good
    C. Good
    D. Average
    E. Poor
    F. Very poor

19. During the past 12 months, did a tooth ache cause you to miss classes or school?

    A. Yes
    B. No

20. During the past 12 months, how many times did you go to the dentist?

    A. 0 times
    B. 1 time
    C. 2 times
    D. 3 times
    E. 4 times
    F. 5 or more times

21. During the past 30 days, how often did you wash your hands before eating?

    A. Never
    B. Rarely
    C. Sometimes
    D. Most of the time
    E. Always

22. During the past 30 days, how often did you wash your hands after using the toilet or latrine?

    A. Never
    B. Rarely
    C. Sometimes
    D. Most of the time
    E. Always

23. During the past 30 days, how often did you use soap when washing your hands?

    A. Never
    B. Rarely
    C. Sometimes
    D. Most of the time
    E. Always

24. During this school year, were you taught in any of your classes the importance of hand washing?

    A. Yes
    B. No
    C. I do not know

25. During this school year, were you taught in any of your classes how to avoid worm infections?

    A. Yes
    B. No
    C. I do not know

The next question asks about physical attacks. A physical attack occurs when one or more people hit or strike someone, or when one or more people hurt another person with a weapon (such as a stick, knife, or gun). It is not a physical attack when two students of about the same strength or power choose to fight each other.

26. During the past 12 months, how many times were you physically attacked?

    A. 0 times
    B. 1 time
    C. 2 or 3 times
    D. 4 or 5 times
    E. 6 or 7 times
    F. 8 or 9 times
    G. 10 or 11 times
    H. 12 or more times

The next question asks about physical fights. A physical fight occurs when two students of about the same strength or power choose to fight each other.

27. During the past 12 months, how many times were you in a physical fight?

    A. 0 times
    B. 1 time
    C. 2 or 3 times
    D. 4 or 5 times
    E. 6 or 7 times
    F. 8 or 9 times
    G. 10 or 11 times
    H. 12 or more times

The next 3 questions ask about serious injuries that happened to you. An injury is serious when it makes you miss at least one full day of usual activities (such as school, sports, or a job) or requires treatment by a doctor or nurse.

28. During the past 12 months, how many times were you seriously injured?

    A. 0 times
    B. 1 time
    C. 2 or 3 times
    D. 4 or 5 times
    E. 6 or 7 times
    F. 8 or 9 times
    G. 10 or 11 times
    H. 12 or more times

29. During the past 12 months, what was the most serious injury that happened to you?

    A. I was not seriously injured during the past 12 months
    B. I had a broken bone or a dislocated joint
    C. I had a cut or stab wound

D. I had a concussion or other head or neck injury, was knocked out, or could not breathe
E. I had a gunshot wound
F. I had a bad burn
G. I was poisoned or took too much of a drug
H. Something else happened to me

30. During the past 12 months, **what was the major cause** of the most serious injury that happened to you?

A. I was not seriously injured during the past 12 months
B. I was in a motor vehicle accident or hit by a motor vehicle
C. I fell
D. Something fell on me or hit me
E. I was attacked or abused or was fighting with someone
F. I was in a fire or too near a flame or something hot
G. I inhaled or swallowed something bad for me
H. Something else caused my injury

The next 2 questions ask about bullying. Bullying occurs when a student or group of students say or do bad and unpleasant things to another student. It is also bullying when a student is teased a lot in an unpleasant way or when a student is left out of things on purpose. It is not bullying when two students of about the same strength or power argue or fight or when teasing is done in a friendly and fun way.

31. During the past 30 days, on how many days were you bullied?

A. 0 days
B. 1 or 2 days
C. 3 to 5 days
D. 6 to 9 days
E. 10 to 19 days
F. 20 to 29 days
G. All 30 days

32. During the past 30 days, how were you bullied **most often**?

A. I was not bullied during the past 30 days
B. I was hit, kicked, pushed, shoved around, or locked indoors

C. I was made fun of because of my race, nationality, or color
D. I was made fun of because of my religion
E. I was made fun of with sexual jokes, comments, or gestures
F. I was left out of activities on purpose or completely ignored
G. I was made fun of because of how my body or face looks
H. I was bullied in some other way

The next 6 questions ask about your feelings and friendships.

33. During the past 12 months, how often have you felt lonely?

    A. Never
    B. Rarely
    C. Sometimes
    D. Most of the time
    E. Always

34. During the past 12 months, how often have you been so worried about something that you could not sleep at night?

    A. Never
    B. Rarely
    C. Sometimes
    D. Most of the time
    E. Always

35. During the past 12 months, did you ever **seriously** consider attempting suicide?

    A. Yes
    B. No

36. During the past 12 months, did you make a plan about how you would attempt suicide?

    A. Yes
    B. No

37. During the past 12 months, how many times did you actually attempt suicide?

    A. 0 times
    B. 1 time

C. 2 or 3 times
D. 4 or 5 times
E. 6 or more times

38. How many close friends do you have?

A. 0
B. 1
C. 2
D. 3 or more

The next 6 questions ask about cigarette and other tobacco use.

39. How old were you when you first tried a cigarette?

A. I have never smoked cigarettes
B. 7 years old or younger
C. 8 or 9 years old
D. 10 or 11 years old
E. 12 or 13 years old
F. 14 or 15 years old
G. 16 or 17 years old
H. 18 years old or older

40. During the past 30 days, on how many days did you smoke cigarettes?

A. 0 days
B. 1 or 2 days
C. 3 to 5 days
D. 6 to 9 days
E. 10 to 19 days
F. 20 to 29 days
G. All 30 days

41. During the past 30 days, on how many days did you use any tobacco products other than cigarettes, such as biri, jarda, tobacco leaf, gul, or shisha?

A. 0 days
B. 1 or 2 days
C. 3 to 5 days
D. 6 to 9 days

E. 10 to 19 days
F. 20 to 29 days
G. All 30 days

42. During the past 12 months, have you ever tried to stop smoking cigarettes?

A. I have never smoked cigarettes
B. I did not smoke cigarettes during the past 12 months
C. Yes
D. No

43. During the past 7 days, on how many days have people smoked in your presence?

A. 0 days
B. 1 or 2 days
C. 3 or 4 days
D. 5 or 6 days
E. All 7 days

44. Which of your parents or guardians use any form of tobacco?

A. Neither
B. My father or male guardian
C. My mother or female guardian
D. Both
E. I do not know

The next 6 questions ask about drinking alcohol. This includes drinking Bangla modh or taari. Drinking alcohol does not include drinking a few sips of wine for religious purposes. A "drink" is a glass of wine, a bottle of beer, a small glass of liquor, or a mixed drink.

45. How old were you when you had your first drink of alcohol other than a few sips?

A. I have never had a drink of alcohol other than a few sips
B. 7 years old or younger
C. 8 or 9 years old
D. 10 or 11 years old

E. 12 or 13 years old
F. 14 or 15 years old
G. 16 or 17 years old
H. 18 years old or older

46. During the past 30 days, on how many days did you have at least one drink containing alcohol?

A. 0 days
B. 1 or 2 days
C. 3 to 5 days
D. 6 to 9 days
E. 10 to 19 days
F. 20 to 29 days
G. All 30 days

47. During the past 30 days, on the days you drank alcohol, how many drinks did you **usually** drink per day?

A. I did not drink alcohol during the past 30 days
B. Less than one drink
C. 1 drink
D. 2 drinks
E. 3 drinks
F. 4 drinks
G. 5 or more drinks

48. During the past 30 days, how did you **usually** get the alcohol you drank? SELECT ONLY ONE RESPONSE.

A. I did not drink alcohol during the past 30 days
B. I bought it in a store, shop, or from a street vendor
C. I gave someone else money to buy it for me
D. I got it from my friends
E. I got it from my family
F. I stole it or got it without permission
G. I got it some other way

Staggering when walking, not being able to speak right, and throwing up are some signs of being really drunk.

49. During your life, how many times did you drink so much alcohol that you were really drunk?

    A. 0 times
    B. 1 or 2 times
    C. 3 to 9 times
    D. 10 or more times

50. During your life, how many times have you got into trouble with your family or friends, missed school, or got into fights, as a result of drinking alcohol?

    A. 0 times
    B. 1 or 2 times
    C. 3 to 9 times
    D. 10 or more times

The next 4 questions ask about drug use. This includes using marijuana, amphetamines, cocaine, inhalants, yaba, or phensedyl.

51. How old were you when you first used drugs?

    A. I have never used drugs
    B. 7 years old or younger
    C. 8 or 9 years old
    D. 10 or 11 years old
    E. 12 or 13 years old
    F. 14 or 15 years old
    G. 16 or 17 years old
    H. 18 years old or older

52. During your life, how many times have you used marijuana (also called ganja or weed)?

    A. 0 times
    B. 1 or 2 times
    C. 3 to 9 times
    D. 10 to 19 times
    E. 20 or more times

53. During the past 30 days, how many times have you used marijuana (also called ganja or weed)?

  A. 0 times
  B. 1 or 2 times
  C. 3 to 9 times
  D. 10 to 19 times
  E. 20 or more times

54. During your life, how many times have you used amphetamines or methamphetamines?

  A. 0 times
  B. 1 or 2 times
  C. 3 to 9 times
  D. 10 to 19 times
  E. 20 or more times

The next 5 questions ask about sexual intercourse.

55. Have you ever had sexual intercourse?

  A. Yes
  B. No

56. How old were you when you had sexual intercourse for the first time?

  A. I have never had sexual intercourse
  B. 11 years old or younger
  C. 12 years old
  D. 13 years old
  E. 14 years old
  F. 15 years old
  G. 16 or 17 years old
  H. 18 year old or older

57. During your life, with how many people have you had sexual intercourse?

  A. I have never had sexual intercourse
  B. 1 person
  C. 2 people
  D. 3 people

E. 4 people
F. 5 people
G. 6 or more people

58. The **last time** you had sexual intercourse, did you or your partner use a condom?

    A. I have never had sexual intercourse
    B. Yes
    C. No

59. The **last time** you had sexual intercourse, did you or your partner use any other method of birth control, such as withdrawal, rhythm (safe time), birth control pills, or any other method to prevent pregnancy?

    A. I have never had sexual intercourse
    B. Yes
    C. No
    D. I do not know

The next 5 questions ask about physical activity. Physical activity is any activity that increases your heart rate and makes you get out of breath some of the time. Physical activity can be done in sports, playing with friends, or walking to school. Some examples of physical activity are running, fast walking, biking, dancing, football, kabaddi, cricket, basketball, and badminton.

60. During the past **7 days**, on how many days were you physically active for a total of at least 60 minutes per day? ADD UP ALL THE TIME YOU SPENT IN ANY KIND OF PHYSICAL ACTIVITY EACH DAY.

    A. 0 days
    B. 1 day
    C. 2 days
    D. 3 days
    E. 4 days
    F. 5 days
    G. 6 days
    H. 7 days

61. During the past 7 days, on how many days did you walk or ride a bicycle to or from school?

    A. 0 days
    B. 1 day
    C. 2 days
    D. 3 days
    E. 4 days
    F. 5 days
    G. 6 days
    H. 7 days

62. During this school year, on how many days did you go to physical education (PE) class each week?

    A. 0 days
    B. 1 day
    C. 2 days
    D. 3 days
    E. 4 days
    F. 5 or more days

63. During the past 7 days, on how many days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?

    A. 0 days
    B. 1 day
    C. 2 days
    D. 3 days
    E. 4 days
    F. 5 days
    G. 6 days
    H. 7 days

64. During the past 7 days, on how many days did you do stretching exercises, such as toe touching, knee bending, or leg stretching?

    A. 0 days
    B. 1 day
    C. 2 days

D. 3 days
E. 4 days
F. 5 days
G. 6 days
H. 7 days

The next question asks about the time you spend mostly sitting when you are not in school or doing homework.

65. How much time do you spend during a **typical or usual** day sitting and watching television, playing computer games, talking with friends, or doing other sitting activities, such as sewing?

A. Less than 1 hour per day
B. 1 to 2 hours per day
C. 3 to 4 hours per day
D. 5 to 6 hours per day
E. 7 to 8 hours per day
F. More than 8 hours per day

The next question asks about how much sleep you get.

66. On an average school night, how many hours of sleep do you get?

A. 4 or less hours
B. 5 hours
C. 6 hours
D. 7 hours
E. 8 hours
F. 9 hours
G. 10 or more hours

The next 10 questions ask about your experiences at school and at home.

67. During the past 30 days, on how many days did you miss classes or school without permission?

A. 0 days
B. 1 or 2 days
C. 3 to 5 days

D. 6 to 9 days
E. 10 or more days

68. During the past 30 days, how often were most of the students in your school kind and helpful?

A. Never
B. Rarely
C. Sometimes
D. Most of the time
E. Always

69. During the past 30 days, how often did your parents or guardians check to see if your homework was done?

A. Never
B. Rarely
C. Sometimes
D. Most of the time
E. Always

70. During the past 30 days, how often did your parents or guardians understand your problems and worries?

A. Never
B. Rarely
C. Sometimes
D. Most of the time
E. Always

71. During the past 30 days, how often did your parents or guardians **really** know what you were doing with your free time?

A. Never
B. Rarely
C. Sometimes
D. Most of the time
E. Always

72. During the past 30 days, how often did your parents or guardians go through your things without your approval?

A. Never
B. Rarely

C. Sometimes
D. Most of the time
E. Always

73. During the past 30 days, how often did your parents or guardians spend time with you?

A. Never
B. Rarely
C. Sometimes
D. Most of the time
E. Always

74. During the past 30 days, how often did your parents or guardians give you money?

A. Never
B. Rarely
C. Sometimes
D. Most of the time
E. Always

75. During the past 30 days, how often did your parents or guardians embarrass you in public or in front of your friends?

A. Never
B. Rarely
C. Sometimes
D. Most of the time
E. Always

76. During the past 30 days, how often did your parents or guardians ignore you (for example, walk away from you or not pay attention to you)?

A. Never
B. Rarely
C. Sometimes
D. Most of the time
E. Always

The next 4 questions ask about HIV infection or AIDS.

77. Have you ever heard of HIV infection or the disease called AIDS?

    A. Yes

    B. No

78. During this school year, were you taught in any of your classes about HIV infection or AIDS?

    A. Yes

    B. No

    C. I do not know

79. During this school year, were you taught in any of your classes how to avoid HIV infection or AIDS?

    A. Yes

    B. No

    C. I do not know

80. Have you ever talked about HIV infection or AIDS with your parents or guardians?

    A. Yes

    B. No

Annex 3

Recall periods for the questions

Question No	Questions
Seven (7) Days	
10	eat food from a fast food restaurant;
43	people smoked in your presence;
60	physically active for a total of at least 60 minutes per day;
61	walk or ride a bicycle to or from school;
63	exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting;
64	stretching exercises, such as toe touching, knee bending, or leg stretching
Thirty (30) Days	
6	go hungry because there was not enough food in your home;
7	usually eat fruit;
8	usually eat vegetables;
9	usually drink carbonated soft drinks;
15	usually clean or brush your teeth;
21	wash your hands before eating;
22	wash your hands after using the toilet or latrine;
23	use soap when washing your hands;
31	how many days were you bullied;
32	how were you bullied most often;
40	smoke cigarettes;
41	use any tobacco products other than cigarettes;
46	have at least one drink containing alcohol;
47	how many drinks did you usually drink per day;
48	how did you usually get the alcohol you drank;
53	how many times have you used marijuana;
67	miss classes or school without permission;

68	how often were most of the students in your school kind and helpful;
69	how often did your parents or guardians check to see if your homework was done;
70	parents or guardians understand your problems and worries;
71	parents or guardians really know what you were doing with your free time;
72	parents or guardians go through your things without your approval;
73	parents or guardians spend time with you
74	parents or guardians give you money;
75	parents or guardians embarrass you in public or in front of your friends;
76	how often did your parents or guardians ignore you
Current School Year	
11	taught in any of your classes the benefits of healthy eating;
12	taught in any of your classes the benefits of eating more fruits and vegetables;
13	taught in any of your classes healthy ways to gain weight;
14	taught in any of your classes healthy ways to lose weight;
24	taught in any of your classes the importance of hand washing;
25	taught in any of your classes how to avoid worm infections;
62	go to physical education (PE) class each week;
78	taught in any of your classes about HIV infection or AIDS;
79	taught in any of your classes how to avoid HIV infection or AIDS;
In Lifetime	
49	drink so much alcohol that you were really drunk;
50	got into trouble with your family or friends, missed school, or got into fights, as a result of drinking alcohol;
52	how many times have you used marijuana;
53	how many times have you used marijuana;
54	how many times have you used amphetamines or methamphetamines.

Annex 4

Factsheet, Bangladesh GSHS, 2014

The 2014 Bangladesh GSHS was a school-based survey of students in Classes 7, 8, 9, and 10, which are typically attended by students aged 13-17. A two-stage cluster sample design was used to produce data representative of all students in Classes 7, 8, 9, and 10 in Bangladesh. At the first stage, schools were selected with probability proportional to enrollment size. At the second stage, classes were randomly selected and all students in selected classes were eligible to participate.

The Bangladesh GSHS measured nutritional status (under- and over-weight); life style behaviours (dietary, physical activity, hygiene); tobacco, alcohol and substance abuse; mental health and social relationships; violence and injury; and sexual behaviors & knowledge of HIV/AIDS. Students self-reported their responses to each question on a OCR answer sheet that were scanned later to import the data

The school response rate was 97%, the student response rate was 94%, and the overall response rate was 91%. A total of 2,989 students participated in the Bangladesh GSHS. The results are representative of all students in the grades. The weighted demographic characteristics were Male (65.2%), Female (34.8%), Class 7 (31.2%), Class 8 (25.8%) Class 9 (21.8%) and Class 10 (21.2%).

Prevalence estimates (percentages) and 95% confidence intervals are presented below.

	Students Aged 13-15 Years			Students Aged 16-17 Years			Students Aged 13-17 Years		
	Total % (CI)	Males % (CI)	Females % (CI)	Total % (CI)	Males % (CI)	Females % (CI)	Total % (CI)	Males % (CI)	Females % (CI)
Number of students in this subgroup[#]	**2657**	**1045**	**1609**	**221**	**134**	**86**	**2878**	**1179**	**1695**
1. Nutritional status									
Underweight[~]	14.3 (10.1–19.8)	16.4 (10.9–24.1)	10.7 (6.8–16.3)	10.0 (6.0–16.1)	10.3 (6.0–17.3)	*	3.9 (10.0–19.0)	15.7 (10.6–22.7)	10.6 (6.8–16.1)
Overweight[~]	9.1 (4.9–16.2)	10.3 (4.8–20.9)	6.9 (4.1–11.5)	4.2 (1.6–10.2)	4.5 (1.6–12.2)	*	8.6 (4.7–15.2)	9.6 (4.6–19.2)	6.8 (4.0–11.2)
Obese[~]	1.2 (0.5–2.8)	0.9 (0.3–2.6)	1.6 (0.6–4.6)	0.5 (0.1–2.0)	0.4 (0.0–2.7)	*	1.1 (0.5–2.5)	0.8 (0.3–2.4)	1.6 (0.6–4.5)
went hungry most of the time or always because there was not enough food during the last 30 days	13.1 (9.7–17.6)	12.0 (7.9–18.0)	15.2 (11.0–20.6)	10.2 (2.5–33.2)	10.0 (1.9–39.4)	*	12.9 (9.5–17.2)	11.8 (7.6–17.9)	15.1 (11.0–20.2)

~ (<-2SD from median for BMI by age and sex)

2. Life style behaviours									
2.1 Dietary behaviour									
Ate **fruit two or more times** per day during the last 30 days	23.1 (18.9–28.0)	24.3 (18.5–31.4)	21.1 (15.8–27.5)	12.0 (8.5–16.9)	12.9 (8.8–18.5)	*	22.2 (18.2–26.7)	23.1 (17.7–29.5)	20.6 (15.5–26.8)
Ate **vegetables three or more times** per day during the last 30 days	32.5 (27.7–37.7)	32.5 (26.6–38.9)	32.8 (26.2–40.1)	24.8 (16.0–36.3)	25.1 (15.1–38.7)	*	31.8 (27.2–36.9)	31.6 (26.0–37.9)	32.5 (26.1–36.6)
Drank **carbonated soft drinks one or more times** per day during the last 30 days	48.0 (43.9–52.1)	48.3 (42.9–53.8)	47.2 (41.2–53.2)	40.9 (31.7–50.7)	41.3 (31.1–52.3)	*	47.3 (43.2–51.5)	47.5 (42.2–53.0)	46.7 (41.0–52.6)
Food from a fast food restaurant three or more days during the last 7 days	26.0 (21.1–31.5)	28.4 (21.2–36.9)	21.8 (15.9–29.1)	20.6 (12.4–32.3)	22.4 (12.8–36.1)	*	25.5 (20.8–30.9)	27.7 (21.0–35.7)	21.4 (15.8–28.4)
Taught in any of their classes the **benefits of healthy eating** during this school year	83.7 (80.7–86.3)	83.9 (80.7–86.6)	83.4 (78.0–87.6)	84.5 (78.0–89.4)	84.4 (77.1–89.7)	*	83.8 (81.0–86.3)	83.9 (81.0–86.5)	83.4 (78.1–87.6)
Taught in any of their classes the **benefits of eating more fruits and vegetables** during this school year	85.5 (82.2–88.2)	84.7 (80.4–88.2)	86.9 (84.0–89.4)	85.0 (77.2–90.5)	83.8 (74.0–90.4)	*	85.4 (82.3–88.1)	84.6 (80.4–88.0)	87.1 (84.3–89.5)
2.2 Physical activity									
Physically active at least 60 minutes per day on all 7 days during the last 7 days	41.2 (36.2–46.4)	41.6 (35.1–48.4)	40.7 (33.8–48.0)	43.0 (33.2–53.4)	45.4 (33.4–58.0)	*	41.4 (36.8–46.2)	42.0 (36.0–48.2)	40.2 (33.4–47.3)

Who did stretching exercises (such as toe touching, knee bending, or leg stretching, on three or more days during the last 30 days	18.1 (15.0–21.7)	20.0 (15.8–28.8)	14.6 (11.2–18.8)	17.2 (12.1–23.9)	19.1 (13.0–27.2)	*	18.0 (15.0–21.5)	19.9 (15.9–24.5)	14.3 (10.9–18.4)
Did not walk or ride a bicycle to or from school during the last 7 days	31.6 (27.4–36.2)	27.5 (21.3–34.7)	39.2 (34.0–44.6)	24.1 (15.8–35.0)	20.4 (11.5–33.6)	*	31.0 (27.1–35.2)	26.7 (21.3–33.0)	39.3 (34.4–44.5)
Spent three or more hours per day **sitting and watching** television, playing computer games, or talking with friends, when not in school or homework during a typical or usual day doing	15.0 (11.3–19.5)	16.8 (11.5–24.1)	11.4 (8.6–14.8)	19.0 (13.6–25.9)	18.0 (11.2–27.7)	*	15.3 (11.8–19.5)	17.0 (11.9–23.6)	11.9 (9.1–15.4)
Attended physical education classes on three or more days each week during this school year	48.4 (43.1–53.7)	49.8 (43.7–55.8)	46.3 (39.3–53.4)	59.9 (43.4–74.4)	59.9 (41.2–76.1)	*	49.4 (44.6–54.2)	50.9 (45.5–56.3)	46.7 (40.0–53.5)
Missed classes or school without permission on one or more days during the last 30 days	30.7 (26.3–35.5)	31.5 (25.4–38.3)	29.2 (22.8–36.4)	35.4 (24.8–45.7)	33.3 (21.8–47.2)	*	31.0 (26.6–35.8)	31.7 (25.9–38.1)	29.7 (23.2–37.2)
2.3 Hygiene habits									
Cleaned or **brushed their teeth** one or more times per day during the last 30 days	87.6 (85.5–89.5)	85.4 (82.5–87.9)	91.6 (88.7–93.9)	81.1 (68.0–89.6)	80.0 (65.2–89.5)	*	87.1 (84.6–89.2)	84.8 (81.4–87.6)	91.4 (88.3–93.8)

Never or rarely washed their hands before eating during the last 30 days	3.2 (1.8–5.5)	3.1 (1.2–7.4)	3.3 (2.1–5.2)	0.7 (0.2–2.3)	0.6 (0.1–2.6)	*	2.9 (1.7–5.1)	2.8 (1.1–6.6)	3.3 (2.1–5.1)
Never or rarely washed their hands after using the toilet or latrine during the last 30 days	1.9 (0.8–4.6)	2.1 (0.5–7.7)	1.6 (0.7–3.4)	3.4 (1.6–7.2)	4.1 (2.0–8.1)	*	2.0 (0.9–4.4)	2.3 (0.8–6.7)	1.5 (0.7–3.3)
Never or rarely used soap when washing their hands during the last 30 days	5.0 (2.7–8.9)	6.1 (2.8–12.8)	3.0 (1.5–6.0)	11.5 (5.6–22.2)	13.5 (6.6–25.7)	*	5.6 (3.0–9.9)	6.9 (3.2–14.2)	2.9 (1.5–5.8)
3. Tobacco, alcohol & substance abuse									
3.1 Tobacco use									
Currently used any tobacco products (used any tobacco products on at least 1 day during the last 30 days)	9.2 (6.0–13.8)	13.2 (8.0–20.8)	2.1 (1.2–3.7)	16.0 (8.1–29.3)	18.9 (9.7–33.6)	*	9.8 (6.3–15.0)	13.8 (8.4–22.0)	2.0 (1.2–3.6)
Currently smoked cigarettes (smoked cigarettes on at least 1 day during the last 30 days)	7.0 (4.1–11.8)	10.1 (5.5–18.0)	1.5 (0.7–3.2)	15.2 (7.2–29.3)	17.9 (8.6–33.5)	*	7.7 (4.4–13.1)	11.0 (5.9–19.6)	1.5 (0.7–3.1)
Currently used **any tobacco products other than cigarettes** (on at least 1 day during the last 30 days)	6.3 (4.2–9.4)	8.9 (5.8–13.5)	1.6 (0.9–2.9)	4.0 (1.2–12.4)	4.7 (1.3–15.1)	*	6.1 (4.1–8.9)	8.4 (5.6–12.5)	1.6 (0.9–2.8)
Tried a cigarette before age 14 years (for the first time among students who ever smoked cigarettes)	89.4 (78.8–95.0)	90.4 (78.0–96.2)	*	*	*	*	80.9 (65.2–90.5)	80.5 (62.6–91.1)	*

Tried to quit smoking cigarettes (among students who smoked cigarettes during the 12 months before the survey)	63.0 (43.5–79.1)	64.5 (40.9–82.7)	*	*	*	*	60.7 (41.9–76.8)	61.7 (39.8–79.7)	*
Students who reported that people **smoked in their presence** on one or more days during the last 7 days	32.9 (27.8–38.5)	37.6 (30.3–45.5)	24.4 (19.7–29.9)	56.3 (46.4–65.7)	61.9 (51.5–71.2)	*	35.0 (29.6–40.8)	40.3 (32.7–48.4)	24.3 (19.6–29.8)
Students who had **parents or guardians who used any form of tobacco**	29.3 (24.5–34.6)	34.3 (27.2–42.1)	20.3 (16.8–24.3)	38.3 (23.2–56.0)	40.9 (24.1–60.2)	*	30.1 (25.0–35.7)	35.0 (27.6–43.2)	20.3 (16.8–24.3)
3.2 Alcohol use									
Currently drank alcohol (at least one drink of alcohol on at least one day during the last 30 days)	1.4 (0.7–2.7)	2.1 (1.1–4.0)	0.1 (0.0–0.5)	4.1 (1.1–14.5)	4.9 (1.4–15.8)	*	1.6 (0.8–3.2)	2.4 (1.2–4.7)	0.1 (0.0–0.5)
Students who ever drank so much alcohol that they were **really drunk** one or more times during their life	1.2 (0.4–3.4)	1.8 (0.6–5.1)	0.0 (*–*)	3.2 (1.1–9.2)	3.8 (1.4–10.0)	*	1.3 (0.5–3.4)	2.0 (0.8–5.0)	0.0 (*–*)
Ever got into trouble with their family or friends, missed school, or got into fights as a **result of drinking alcohol** (one or more times during their life)	1.2 (0.5–3.1)	1.9 (0.7–4.8)	0.0	1.7 (0.6–4.8)	2.0 (0.8–5.2)	*	1.2 (0.5–3.0)	1.8 (0.8–4.4)	*

3.3 Drug use									
Currently used marijuana (one or more times during the last 30 days)	1.6 (0.8–3.3)	2.1 (0.9–5.1)	0.5 (0.2–1.5)	2.7 (0.7–10.1)	3.1 (0.8–11.0)	*	1.7 (0.8–3.6)	2.2 (0.9–5.3)	0.5 (0.1–1.5)
Percentage of students who **ever used marijuana** one or more times during their life	1.4 (0.7–2.8)	1.8 (0.8–4.3)	0.4 (0.1–1.5)	3.2 (1.0–9.5)	3.8 (1.3–10.5)	*	1.6 (0.8–3.2)	2.1 (0.9–4.7)	0.4 (0.1–1.4)
Ever used amphethamines or methamphetamines (one or more times during their life)	1.7 (0.9–3.2)	2.2 (1.1–4.4)	0.6 (0.2–1.6)	4.1 (1.1–14.5)	4.8 (1.3–15.8)	*	1.9 (1.1–3.5)	2.5 (1.3–4.7)	0.6 (0.2–1.6)
4. Mental health									
Most of the time or always **felt lonely** during the last 12 months	10.9 (8.5–14.0)	11.7 (8.6–15.7)	9.4 (7.0–12.6)	11.7 (8.1–16.7)	12.2 (8.2–17.8)	*	11.0 (8.7–13.8)	11.7 (8.8–15.4)	9.4 (7.1–12.4)
Who did **not have any close friends**	8.6 (6.7–10.8)	7.0 (4.6–10.4)	11.5 (9.0–14.6)	4.8 (1.8–11.9)	4.2 (1.3–13.0)	*	8.2 (6.4–10.5)	6.7 (4.5–9.9)	11.4 (8.9–14.3)
Most of the time or always were so **worried** about something that they **could not sleep at night** during the last 12 months	4.5 (3.4–5.8)	4.1 (2.6–6.3)	4.9 (3.8–6.3)	7.1 (2.2–20.8)	6.8 (1.6–24.3)	*	4.7 (3.6–6.2)	4.4 (2.9–6.6)	5.1 (3.9–6.7)
Seriously **considered attempting suicide** during the last 12 months	4.8 (3.6–6.5)	4.3 (2.7–6.9)	5.8 (4.0–8.3)	5.4 (1.7–15.7)	5.4 (1.4–18.4)	*	4.9 (3.6–6.6)	4.4 (2.8–7.0)	5.8 (4.1–8.2)

Made a plan about how they would **attempt suicide** during the last 12 months	7.7 (5.5–10.6)	7.6 (4.7–12.1)	7.5 (5.9–9.4)	5.6 (2.9–10.5)	6.3 (3.0–12.6)	*	7.5 (5.5–10.1)	7.5 (7.8–11.3)	7.3 (5.7–9.2)
Attempted suicide one or more times during the last 12 months	7.0 (5.4–9.0)	7.2 (5.2–9.9)	6.1 (4.2–8.8)	4.3 (1.4–12.6)	4.6 (1.3–15.0)	*	6.7 (5.2–8.7)	6.9 (5.0–9.5)	6.0 (4.2–8.6)
5. Social and parental relationships									
Most of the students in their school were most of the time or always kind and **helpful** during the last 30 days	55.4 (50.6–60.1)	54.2 (47.9–60.4)	57.5 (50.3–64.3)	63.2 (57.5–65.5)	66.9 (59.7–73.4)	*	56.1 (51.5–60.6)	55.6 (49.7–61.4)	57.0 (49.8–63.9)
Parents or guardians most of the time or always checked to see if their **homework was done** during the last 30 days	53.6 (48.2–58.9)	52.0 (45.7–58.2)	56.2 (49.7–62.5)	58.9 (41.3–74.5)	60.1 (38.7–78.2)	*	54.0 (48.6–59.3)	52.9 (46.5–59.2)	56.2 (49.8–62.4)
Parents or guardians most of the time or always **understood their problems and worries** during the last 30 days	47.2 (41.6–52.8)	42.7 (34.7–51.1)	55.0 (48.6–61.3)	47.7 (37.1–58.6)	47.8 (36.5–59.3)	*	47.2 (42.1–52.4)	43.3 (36.2–50.7)	54.8 (48.5–61.0)
Parents or guardians never or rarely went through their things **without their approval** during the last 30 days	85.6 (82.3–88.4)	83.9 (79.3–87.7)	88.7 (84.5–91.9)	72.8 (66.3–78.5)	69.8 (62.6–76.2)	*	84.5 (81.1–87.3)	82.4 (77.7–86.2)	88.7 (84.6–91.8)
Parents or guardians most of the time or **always really knew** what they were doing with their **free time** during the last 30 days	43.1 (38.7–47.7)	40.1 (34.2–46.3)	48.4 (42.3–54.5)	40.7 (29.1–53.4)	38.0 (24.8–53.2)	*	42.9 (38.7–47.3)	39.9 (34.0–46.0)	48.7 (42.6–54.8)

Parents or guardians most of the time or always **spent time with them** during the last 30 days	49.2 (45.5–52.9)	43.0 (36.9–49.2)	60.7 (54.9–66.2)	53.5 (43.9–62.9)	51.0 (39.2–62.7)	*	49.6 (46.1–53.1)	43.9 (38.1–49.8)	61.1 (55.3–66.6)
6. Violence and injury									
Who were physically attacked (one or more times during the last 12 months)	62.5 (57.8–67.1)	66.5 (59.4–72.9)	55.1 (49.2–60.9)	76.0 (64.7–84.6)	77.5 (65.4–86.3)	*	63.7 (59.0–68.2)	67.7 (61.0–73.8)	55.5 (49.7–61.3)
Who were in a physical fight one or more times during the last 12 months	21.1 (16.9–26.0)	27.1 (21.8–33.1)	10.2 (7.7–13.4)	34.8 (27.4–43.0)	38.6 (31.1–46.8)	*	22.3 (18.1–27.1)	28.4 (23.2–34.1)	10.4 (7.9–13.4)
Who were **seriously injured** one or more times during the last 12 months	43.5 (37.4–49.7)	47.4 (38.8–56.2)	35.7 (30.3–41.5)	46.8 (30.0–64.3)	46.9 (29.1–65.5)	*	43.8 (37.8–49.9)	47.4 (39.3–55.6)	36.2 (30.9–41.8)
Who were **bullied** on one or more days during the last 30 days	23.6 (20.5–27.1)	27.1 (23.0–31.5)	17.3 (14.1–21.1)	34.2 (22.3–48.5)	36.4 (23.1–52.3)	*	24.6 (21.0–28.5)	28.1 (23.5–33.3)	17.5 (14.2–21.5)
7. Sexual behaviors & knowledge of HIV/AIDS									
Ever had sexual intercourse	10.0 (7.6–13.0)	13.7 (10.0–18.5)	3.6 (2.3–5.8)	3.5 (1.4–8.5)	3.3 (1.0–10.1)	*	9.4 (7.2–12.3)	12.5 (9.2–16.8)	3.7 (2.2–6.1)
Had sexual intercourse before age 14 years (for the first time among students who ever had sexual intercourse)	46.8 (31.7–62.6)	42.4 (25.8–61.0)	*	*	*	*	45.4 (30.7–60.9)	41.1 (24.9–59.5)	*

Used a condom during last sexual intercourse, among students who ever had sexual intercourse	59.4 (39.8–76.4)	61.3 (40.2–78.9)	*	*	*	*	59.4 (40.5–75.8)	61.8 (41.2–78.9)	*
Used a method of birth control (such as condoms, withdrawal, rhythm, or birth control pills to prevent pregnancy, during last sexual intercourse, among students who ever had sexual intercourse)	86.5 (73.5–93.7)	88.0 (74.8–94.8)	*	*	*	*	86.3 (73.3–96.3)	87.8 (74.4–94.7)	*
Ever heard of HIV infection or AIDS	77.1 (72.8–81.0)	73.8 (68.3–78.7)	83.1 (78.9–86.6)	93.3 (86.5–96.8)	93.8 (87.2–97.1)	*	78.6 (74.3–82.2)	76.0 (70.7–80.7)	83.4 (79.2–86.9)
Who were taught in any of their classes about HIV infection or AIDS during this school year	62.4 (56.7–67.7)	59.1 (52.2–65.6)	68.8 (59.9–76.4)	85.9 (76.7–91.9)	85.3 (74.6–92.0)	*	64.5 (58.9–69.7)	62.0 (55.3–68.3)	69.5 (61.1–76.9)
Who were taught in any of their classes **how to avoid HIV infection or AIDS** during this school year	64.5 (58.7–70.0)	61.0 (54.1–67.5)	71.2 (62.1–78.9)	82.0 (68.4–90.6)	81.0 (65.9–90.4)	*	66.1 (60.3–71.4)	63.3 (56.4–69.7)	71.8 (63.1–79.2)

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