

Tonga
2017 Global School-Based Student Health Survey

Final Report

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Executive Summary

Tonga was fortunate to participate in the Global School-based Health Survey (GSHS) initiated by World Health Organization (WHO), in collaboration with UNAIDS, UNESCO, and UNICEF, and with technical assistance from the U.S. Centre for Disease Control and Prevention (CDC). Tonga conducted its first GSHS in 2010 and this is the second GSHS conducted in collaboration with the Tonga Health Promotion Foundation.

Purpose:

The purpose of the GSHS is to obtain systematic information from students to support school health and youth health programmes and policies at all levels (global, regional and national). The GSHS is a school-based survey conducted primarily among student ages 13 – 17 years. It includes modules, which measure the health behaviours and protective factors related to the leading causes of morbidity and mortality among youths. The core modules include alcohol use, drug use, dietary behaviours, hygiene, mental health, physical activity, protective factors, HIV infection, tobacco use and violence and intended injury. Tonga chose to include questions about HIV infection but excluded questions about sexual behaviour, STI infection and unwanted pregnancy as per advice from the affiliated school authorities. There are some local additional questions relating to dietary behaviour, media access and physical disabilities.

Methodology:

Tonga GSHS 2017 was completed by 3,333 students from 35 secondary schools. The school response rate was 100%, the student response rate was 90%, and the overall response rate was 90%. The results are representative of all students in the grades listed below. The weighed demographic characteristics of the sample are as follows:

Male	50.7%	Form 1	17.1%
Female	49.3%	Form 2	19.1%
		Form 3	18.7%
		Form 4	19.2%
		Form 5	18.5%
		Form 6	7.3%
		All other forms	0.1%

Students completed a self-administered, anonymous, 84-item questionnaire. Survey procedures were designed to protect the privacy of students by allowing for anonymous and voluntary participation.

Tonga GSHS 2017 employed a two-stage cluster sample design to produce a representative sample of students in Forms 1 to 6.

The first-stage sampling frame consisted of all schools containing any of the forms. Schools were selected with probability proportional to school enrolment size with 35 secondary schools randomly selected in Tonga to participate in the GSHS 2017. Forms 1 to 6 were chosen where most likely to capture the targeted age group, 13 to 17 years.

The second-stage sampling consisted of randomly selected intact classrooms (using a random start) from each school to participate. All classes in each selected schools were included in the sampling frame. All students in the sampled classrooms considered eligible to participate in the GSHS.

The two methods used for obtaining information include:

1. Questionnaire – a self-administered 84-item questions, and
2. Physical Measurements: measuring of height (cm) and weight (kg) for body mass index (BMI).

There were 12 survey administrators divided into two teams specially trained to conduct the GSHS with about 90% of them having taken part in the first GSHS in 2010. The questionnaires were available in both English and Tongan.

Key results:

Alcohol use

The overall prevalence of students who are current drinkers is 14.5% and is significantly higher among males (20.3%) in comparison to females (8.6%). Of those who reported drinking in the past 30 days, 65.2% had their first drink before the age of fourteen years. Of the students who drank in the past 30 days 38.8% got it from their friends. Males are significantly at higher risk of getting into trouble with families or friends, missing school or getting into fights (15.2%) than females (4.8%).

Dietary Behaviours

The overall prevalence of overweight and obese is considerably high with 56.4% of students surveyed being overweight and 25.3% being obese. Females are significantly more overweight and obese in comparison to males. The findings showed 59.8% of the students consuming a carbonated soft drink at least one or more times per day during the past 30 days. The high rate (69.5%) of fast foods consumption (at least one or more times per day during the past 7 days) might also play a part in the high prevalence of overweight and obese among students. Consumption of salty foods is also high with 54.7% consuming salty foods two or more days during the past 30 days.

Majority of the students have their breakfast (68.9%) and lunch (66.2%) at the school's canteen. Although the prevalence of overweight and obesity are high, the intake of fruits and vegetables in at least one or more times per day and at least two or more times per day in the past 30 days is 71.4% and 51.5% respectively.

Ministry of Health media programs on both radio and television were watched or heard by 73.6% of students almost every day or sometimes.

Drug use

9.1% of students reported using marijuana one or more times during their lifetime with males being statistically more likely (15.5%) compared to females (2.8%). 6.7% of students reported having used amphetamines or methamphetamines one or more times during their lifetime with males being statistically more likely (10.6%) compared to females (2.6%). Among students who reported ever having used drugs in their lifetime, 72.1% (all of whom were males) first tried drugs before age 14 years.

Hygiene

Oral hygiene is very high among the students, with 92.3% of students (88.2% of males and 96.5% of females) having reported cleaning or brushing their teeth more than one time per day during the past 30 days.

Mental Health

The survey found that 16.5 % (19.3% males and 13.7% females) of the surveyed population actually attempted suicide at least once during the past 12 months. 14.3% of students reported having made a plan about how they would attempt suicide during the past 12 months while 12.6% have seriously considered attempting suicide during the past 12 months. It was also found that 49.5% of students of the students who reported having worried about something that they could not sleep during the past 12 months reported being bullied one or more times during the past 30 days.

Physical Activity

Among the surveyed students, 32.5% for at least the recommended 60 minutes per day on 5 or more days during the past 7 days while 17.9% were physically active for at least 60 minutes per day on all 7 days during the past 7 days. There is still a statistically significant amount of students who are not physically active (24.8%) for at least 60 minutes on any day during the past 7 days. Only 14.7% of students reported going to physical education class on 5 or more days per week during the school year.

20.9% of students spend three or more hours per day doing sitting activities such as playing computers or doing homework during a typical day. The 49.1% of students are not walking or riding a bicycle to or from school with no significant difference between males and females.

Protective Factors

Only 31.9% of students surveyed 35.4% of females and 28.9% of males – a statistically significant difference reported having parents or guardians who understood their problems and worries most of the time or always during the past 30 days. The overall truancy at least one or more days of the past 30 was 29.7% (34.6% among males and 24.6% of females –a statistically significant difference). Majority of the students (74.3%) reported having parents or guardians who go through their things without their approval never or rarely during the past 30 days.

HIV-related knowledge

56.8% students have heard of HIV infection or the disease called AIDS. Only 27.3% of students were taught in any of their classes during the school year about HIV infection or AIDS.

Tobacco use

17.7% of students (26.1% of males and 9.2% of females –statistically significant difference) reporting having smoked cigarettes on one or more days during the past 30 days. Among students who reported smoking, most (75.2%) smoked their first tried a cigarette before age fourteen years.

53.1% students (56.7% males and 49.4% females) reported that people smoked in their presence on one or more days during the past seven days. 37.5% of the students reported that their parents or guardians use tobacco.

Violence and unintentional injury

48.6 % of the students reported having been physically attacked one or more times during the past 12 months while 38.7% were involved in physical fight one or more times during the past 12 months and 49.1% were seriously injured one or more time during the past 12 months.

An overall 38.8% of students were bullied on one or more days during the past 30 days and among them, 30.7% reported being hit, kicked, pushed, shoved or locked indoors during the past 30 days. These rates of violence and unintentional injury indicated a significant difference between sexes with higher rates among males than females.

Physical difficulties or disabilities

The survey revealed that 13.9% of the surveyed students reported having difficulty seeing or wearing assistive devices such as glasses, 17% students reported having difficulty hearing or using hearing aid, 19.2% have difficulty walking or climbing steps, 24.7% have difficulty remembering or concentration, and 15% reported difficulty with self-care.

Recommendations:

1. To disseminate the Tonga GSHS results to stakeholders and collaborate to develop and implement interventions to support the reduction of behavioural risk factors and improve protective factors for health.
2. To develop standardized targets, assessment criteria, and interventions for the Health Promoting Schools programme in order to strengthen efforts to improve student health.
3. To integrate opportunities to build capacity among and increase involvement of teachers, parents and community members to support healthy lifestyles.

Introduction

Tonga Global School-based Student Health Survey (GSHS) 2017 is a school-based survey conducted primarily among students aged 13 to 17 years. This survey was implemented with support from Tonga Ministry of Health, Tonga Health Promotion Foundation, WHO Western Pacific Regional Office and the Center for Disease Control and Prevention (CDC).

This report describes results from the second GSHS conducted in Tonga by the Ministry of Health and Ministry of Education, and Mission schools during the intervention period of 20th February to 4th April 2017.

The purpose of the GSHS is to provide accurate data on health behaviours and protective factors among students to:

- Help countries develop priorities, establish programmes, and advocate for resources for school health and youth health programmes and policies;
- Establish trends in the prevalence of health behaviours and protective factors for use in evaluation of school health and youth health promotion; and
- Allow countries, international agencies, and others to make comparisons across countries and within countries regarding the prevalence of health behaviours and protective factors

The GSHS is a school-based survey conducted primarily among students aged 13-17 years. It measures behaviours and protective factors related to the leading causes of mortality and morbidity among youth and adults in Tonga:

- Alcohol use
- Dietary behaviours
- Drug use
- Hygiene
- Mental health
- Physical activity
- Protective factors
- HIV infection and other STI
- Tobacco use
- Violence and unintentional injury
- Media access and physical difficulties

Methods

The 2017 Tonga GSHS employed a two-stage cluster sample design to produce a representative sample of students in forms. The first-stage sampling frame consisted of all schools containing any of forms. Schools were selected with probability proportional to school enrolment size. 35 schools were selected to participate in the Tonga GSHS.

The second stage of sampling consisted of randomly selecting intact classrooms (using a random start) from each school to participate. All classrooms in each selected school were included in the sampling frame. All students in the sampled classrooms were eligible to participate in the GSHS.

The Tonga GSHS was a school-based survey of students in Forms One to Seven. A two-stage cluster sample design was used to produce data representative of all students in Forms One to Seven in Tonga.

A weighting factor was applied to each student record to adjust for non-response and for the varying probabilities of selection. $W = W1 * W2 * f1 * f2 * f3$ W1 = the inverse of the probability of selecting the school;

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

f1 = a school-level nonresponse adjustment factor calculated by school size category (small, medium, large). The factor was calculated in terms of school enrollment instead of number of schools. f2 = a student-level nonresponse adjustment factor calculated by class.

f3 = a post stratification adjustment factor calculated by grade.

For the 2017 Tonga GSHS, 3,333 questionnaires were completed in 35 schools. The school response rate was 100%, the student response rate was 90%, and the overall response rate was 90%.

The data set was cleaned and edited for inconsistencies. Missing data were not statistically imputed. Software that takes into consideration the complex sample design was used to compute prevalence estimates and 95% confidence intervals. GSHS data are representative of all students attending form 1 to 6 in TONGA.

Survey administration conducted from 20 February to 4 April, 2017. Survey procedures were designed to protect student privacy by allowing for anonymous and voluntary participation. Students completed the self-administered questionnaire during one classroom period and recorded their responses directly on a computer-scannable answer sheet. Thirteen survey administrators were specially trained to conduct the GSHS. The questionnaire was available in both English and Tongan languages.

The Tonga GSHS 2017 questionnaire contained 84 questions addressing the following topics:

- Alcohol use
- Dietary behaviours including media access
- Drug use
- Hygiene

- Mental health
- Physical activity
- Protective factors
- HIV infection
- Tobacco use
- Violence and unintentional injury
- Physical difficulties

The questionnaire was developed by in collaboration among Tonga Ministry of Health, the CDC, and WHO.

Results

Demographics

The demographic characteristics of the sample are described in the following table.

Table 1. Demographic characteristics of the sample TONGA, 2017.

	Sex		Age				Form						
	Males	Females	12 or younger	13-15	16-17	18 or older	1	2	3	4	5	6	Other
TONGA	1,520	1,792	781	1,599	809	139	620	536	614	599	664	282	18

Alcohol Use

Table 2. Alcohol use among students, by sex, TONGA, 2017.

Behaviour	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Among students who ever had a drink of alcohol, those who had their first drink of alcohol before age 14 years	65.2 (58.6 – 71.3)	68.7 (61.8 – 74.8)	57.2 (47.9 – 66.1)	No
Drank at least one drink containing alcohol on one or more of the past 30 days	14.5 (12.7 – 16.5)	20.3 (17.4 – 23.6)	8.6 (7.0 – 10.5)	Yes
Among students who drank alcohol during the past 30 days, those who usually drank two or more drinks per day on the days they drank alcohol	29.9 (25.5 – 34.7)	28.8 (23.4 – 35.0)	32.5 (26.1 – 39.6)	No
Among students who drank alcohol during the past 30 days, the percentage who usually got the alcohol they drank from their friends	38.8 (33.8 – 44.0)	34.7 (29.6 – 40.1)	48.5 (38.7 – 58.4)	No
Drank so much alcohol that they were really drunk one or more times during their life	13.6 (11.9 – 15.5)	20.3 (17.3 – 23.6)	7 (5.7 – 8.6)	Yes
Got into trouble with their family or friends, missed school, or got into fights one or more times during their life as a result of drinking alcohol.	10.0 (8.6 - 11.7)	15.2 (12.6 – 18.2)	4.8 (3.8 – 5.9)	Yes

*95% confidence interval.

In **TONGA**, among students who ever had a drink of alcohol, 65.2% of students had their first drink of alcohol before age 14 years

Overall, the prevalence of current alcohol use among students (i.e., drinking at least one drink containing alcohol on one or more of the past 30 days) is 14.5%. Significantly that males are drink much alcohol than females.

Among students who drank alcohol during the past 30 days, 29.9% of students usually drank two or more drinks per day on the days they drank alcohol during the past 30 days.

Among students who drank alcohol during the past 30 days, 38.8% of students usually got the alcohol they drank from their friends.

Overall, 13.6% of students drank so much alcohol they were really drunk one or more times during their life.

Overall, 10.0% of students got into trouble with their family or friends, missed school, or got into fights one or more times during their life as a result of drinking alcohol.

The 65.2% prevalence of drinking alcohol on their first drink before age of fourteen years is a concern. This is signified that early exposure to behaviour of drinking alcohol is very high. The prevalence of 14.5% student who currently drinking is slightly high and also indicated of 38.8% of students are more likely to drink alcohol when their friends gave them to drink. However males are significantly drunk too much alcohol of 20.3% and they are also got highly in trouble of 15.2% but females are having risk of drinking alcohol too.

Dietary Behaviours

Table 3. BMI and dietary behaviours, by sex, **TONGA**, 2017.

Behaviour or Health Outcome	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Underweight ¹	0.4 (0.3 – 0.8)	0.7 (0.3 – 1.3)	0.2 (0.1 – 0.8)	No
Overweight ²	56.4 (54.3 – 58.5)	50.6 (47.8 – 53.3)	62.5 (59.4 – 65.4)	Yes
Obese ³	25.3 (23.7 – 27.0)	23.0 (20.9 – 25.1)	27.8 (25.2 – 30.5)	Yes
Went hungry most of the time or always because there was not enough food in their home during the past 30 days	11.1 (9.6 – 12.7)	12.2 (10.2 – 14.4)	9.9 (8.3 – 11.7)	Yes

Not eat fruits during the 30 days	9.2 (8.0 – 10.6)	10.2 (8.6 – 12.1)	8.2 (6.8 – 9.8)	No
Usually ate fruits less than one time per day during the past 30 days	19.4 (17.9 – 20.9)	18.9 (17.1 – 20.7)	19.8 (17.6 – 22.1)	No
Usually ate fruits one or more times per day during the past 30 days	71.4 (69.6 – 73.3)	70.9 (68.5 – 73.2)	72.1 (69.5 – 74.6)	No
Usually ate fruit two or more times per day during the past 30 days	51.5 (49.4 – 53.6)	50.3 (47.5 – 53.2)	52.7 (50.0 – 55.3)	No
Usually ate fruit three or more times per day during the past 30 days	36.5 (34.5 – 38.6)	36.4 (33.4 – 39.4)	36.9 (34.3 – 39.6)	No
Not eat vegetables during the past 30 days	7.4 (6.5 – 8.3)	7.8 (6.5 – 9.4)	7.0 (5.9 – 8.3)	No
Usually ate vegetables less than one time per day during 30 days	16.9 (15.5 – 18.3)	17.4 (15.4 – 19.7)	16.1 (14.3 – 18.1)	No
Usually ate vegetables one or more times per day during the 30 days	75.8 (73.9 – 77.5)	74.8 (72.0 – 77.3)	76.9 (74.5 – 79.2)	No
Usually ate vegetables two or more times per day during the 30 days	50.0 (47.8 – 52.3)	49.6 (46.4 – 52.7)	50.3 (47.6 – 53.0)	No
Usually ate vegetables three or more times per day during the past 30 days	35.5 (33.6 – 37.5)	34.6 (32.0 – 37.4)	36.4 (33.8 – 39.2)	No
Usually ate fruits and vegetables five or more times per day during the past 30 days	38.7 (36.0 – 41.6)	37.2 (32.9 – 41.6)	40.7 (37.0 – 44.6)	No
Not drink carbonated soft drink (excluding diet soft drink) during the 30 days	12.5 (11.2 – 13.9)	13.7 (11.7 – 15.9)	11.1 (9.6 – 12.9)	No
Usually drank carbonated soft drink less than one time per day during the 30 days	27.7 (26.1 – 29.3)	29.6 (27.2 – 32.2)	25.8 (23.8 – 27.9)	No
Usually drank carbonated soft drinks one or more times per day during the past 30 days	59.8 (57.9 – 61.7)	56.7 (53.8 – 59.5)	63.1 (60.6 – 65.5)	Yes
Usually drank carbonated soft drink two or more times per day during the past 30 days	36.4 (34.8 – 38.1)	34.9 (32.3 – 37.5)	38.2 (36.1 – 40.3)	No
Usually drank carbonated soft drink three or more times per day during the past 30 days	24.7 (23.3 – 26.2)	24.1 (21.9 – 26.4)	25.4 (23.4 – 27.5)	No
Not eat food from a fast food restaurant during the 7 days	30.5 (28.7 – 32.3)	32.0 (29.6 – 34.6)	29.0 (26.9 – 31.2)	No
Ate food from a fast food restaurant one or more days during 7 days	69.5 (67.7 – 71.3)	68.0 (65.4 – 70.4)	71.0 (68.8 – 73.1)	No
Ate food from a fast food restaurant two or more days during 7 days	43.0 (41.1 – 45.0)	42.5 (40.1 – 44.9)	43.8 (41.2 – 46.5)	No
Ate food from a fast food restaurant on three or more days during the past 7 days	27.1 (25.3 – 28.9)	25.6 (23.3 – 28.1)	28.7 (26.2 – 31.3)	No
Ate breakfast most of the time or always during the past 30 days	43.1 (41.2 – 45.1)	45.7 (43.1 – 48.3)	40.5 (37.9 – 43.1)	No
Not enough food in their home as main reason for not eating breakfast	16.3 (14.5 – 18.2)	19.6 (16.8 – 22.7)	13.0 (11.1 – 15.2)	Yes
Usually purchased or got most of their foods for breakfast at the school canteen or at home on school days	68.9 (66.5 – 71.1)	67.4 (64.2 – 70.5)	70.8 (67.7 – 73.6)	No

Bought some other type of food or drinks most often on a school day	27.8 (26.1 – 29.7)	23.8 (21.1 – 26.7)	31.4 (29.1 – 33.9)	Yes
Brought lunch to school most of the time or always during the past 30 days	29.4 (27.6 – 31.3)	24.6 (22.6 – 26.8)	34.4 (31.8 – 37.1)	Yes
Usually purchased or got most of their foods for lunch at the school food canteen on school days	66.2 (63.5 – 68.8)	62.1 (58.4 – 65.6)	70.1 (67.0 – 72.9)	Yes
Usually drank fruit juice two or more times per day during the past 30 days	39.9 (37.9 – 42.0)	42.2 (39.3 – 45.1)	37.7 (35.3 – 40.2)	No
Usually ate salty foods two or more days during the past 30 days	54.7 (52.7 – 56.6)	52.2 (49.4 – 54.9)	57.0 (54.3 – 59.7)	No
Usually ate foods high in fat three or more times per day during the past 30 days	21.6 (20.0 – 23.2)	20.3 (18.1 – 22.7)	22.6 (20.6 – 24.8)	No
Saw advertisement for carbonated drinks or fast foods most of the time or always when they watched television, videos or movies	27.0 (25.2 – 28.9)	24.9 (22.3 – 27.8)	29.3 (26.7 – 32.2)	No
Saw a lot of advertisements for carbonated drinks or fast foods on the internet during the past 30 days	28.6 (26.3 – 31.0)	30.3 (27.5 – 33.3)	26.4 (23.6 – 29.5)	No
Got a lot of text messages or mobile phone calls that encourage them to go to a carbonated soft drink or fast food company website during the past 30 days	16.8 (14.8 – 19.0)	18.3 (15.6 – 21.4)	14.9 (12.3 – 17.9)	No
Could buy carbonated soft drinks or get them for free in the school	18.6 (16.6 – 20.8)	19.9 (17.2 – 22.8)	17.4 (15.2 – 19.9)	No
Saw a lot of advertisements for carbonated soft drinks or fast foods in their school during the past 30 days	18.0 (16.4 – 19.7)	19.9 (17.7 – 22.3)	16.2 (14.2 – 18.3)	No
Described themselves as slightly or very overweight	35.5 (33.5 – 37.6)	29.6 (27.0 – 32.2)	41.6 (38.8 – 44.5)	Yes
Taught in any of their classes during this school year the benefits of healthy eating	61.6 (58.7 – 64.4)	60.2 (56.6 – 63.8)	63.2 (59.6 – 66.6)	No
Listen to radio or watched TV programs from the Ministry of Health almost every day or sometimes	73.6 (71.6 – 75.5)	72.2 (69.4 – 74.8)	74.8 (72.1 – 77.3)	No
Trying to lose weight	50.9 (49.0 – 52.8)	45.8 (42.8 – 48.7)	56.1 (53.7 – 58.6)	Yes
Exercise to lose weight or to keep from gaining weight during the past 30 days	57.8 (55.9 – 59.6)	63.4 (60.9 – 65.9)	52.4 (49.8 – 55.0)	Yes
Ate less food, fewer calories, or foods low in fat to lose weight or to keep from gaining weight during the past 30 days	57.7 (55.4 – 60.0)	60.2 (56.6 – 63.7)	55.1 (52.5 – 57.6)	No
Exercised to gain weight during the past 30 days	18.2 (16.4 – 20.0)	22.4 (19.7 – 25.3)	14.0 (12.4 – 15.9)	Yes

*95% confidence interval.

¹
<-2SD from median for BMI by age and sex.

²
>+1SD from median for BMI by age and sex.

³

>+2SD from median for BMI by age and sex.

In **TONGA**, 0.4% of students were underweight, 56.4% of students were overweight, and 25.3% were obese and females are most likely obese in comparison to males (27.8% to 23.0%).

Overall, 11.1% of students went hungry most of the time or always because there was not enough food in their home during the past 30 days.

9.2% of students are not eat fruit whereas not difference between males and females.

19.4% of students ate less than one time a day and no different between males and females.

71.4% of students ate one or more times a day and no different between males and females.

51.5% of students ate two or more times a days and no different between males and females.

36.5% of students ate three or more times a days and no different between males and females.

51.1% of students usually ate fruit, such as apples, oranges, mango, bananas, kuava or lesi two or more times per day during the past 30 days and both males are females are not significantly different.

50% of students usually ate vegetables, such as tomatoes, carrots, cucumber, beans, pele or lu two or more times per day during the past 30 days and not significantly different between males and females.

38.7% of students usually ate fruits and vegetables five or more times per day during the past 30 days and not significantly different between males and females.

59.8% of students drank carbonated soft drinks, such as Coca Cola, Fanta, Sprite, Grape or Frubu one or more times per day during the past 30 days. Females of 63.1% are more likely to drink more than 5.7% of Boys.

27.1% of students ate food from a fast food restaurant, such as BBQ takeaway, Hot Curry takeaway, Country Fried Chicken takeaway and Fish & Chips takeaway on three or more days during the past 7 days and different in between Males and Females.

35.5% of students describe themselves as slightly or very overweight and 41.6% of Females are significantly described themselves overweight than 29.6% of Males.

43.1% of students ate breakfast most of the time or always during the past 30 days and both Males and Females are the most likely the same.

61.6% of students taught in any of their classes during this school year the benefits of healthy eating and mostly likely the same for both Males and Females.

73.6% of students listened to radio or watched TV programs from Ministry of Health with 72.2% of Males and 74.8% Females with no significant different.

Overall, the 25.3% prevalence of Obesity and 27.8% of Females are significantly obese in comparison to 23% of Males. 11.1% of students went hungry most of the time or always because there was not enough food in their home during the past 30 days with 12% of Males are most likely to go hungry because of not enough food at home from females of 9.9%. 59.8% of students drank carbonated soft drinks, such as Coca Cola, Fanta, Sprite, Grape or Frubu one or more times per day during the past 30 days which are the Females of 63.1% are most likely to drink more than 56.7% of Males. 35.5% of students describe themselves as slightly or very overweight and 41.6% of Females are significantly described themselves overweight than 29.6% of Males. Listening and watching of Ministry of Health programs is pretty good of 73.6% with no significant different for Males and Females.

Drug Use

Table 4. Drug-use behaviours, by sex, TONGA, 2017.

Behaviour	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Among students who ever used drugs, those who first used drugs before age 14 years	72.1 (64.9 – 78.2)	71.1 (64.2 - 78.2)	0.0 (0.0 – 0.0)	Yes
Used marijuana one or more times during their life	9.1 (7.6 – 10.8)	15.5 (12.8 – 18.7)	2.8 (2.0 – 3.8)	Yes
Used marijuana one or more times during the past 30 days	7.9 (6.4 – 9.6)	13.4 (10.7 – 16.5)	2.3 (1.6 – 3.1)	Yes
Used amphetamines or methamphetamines one or more times during their life	6.7 (5.4 – 8.4)	10.6 (8.2 – 13.6)	2.6 (1.9 – 3.5)	Yes

*95% confidence interval.

In **TONGA**, among students who ever used drugs, 72.1% of students first used drugs before age 14 years.

Overall, 9.1% of students used marijuana one or more times during their life.

Overall, 7.9% of students used marijuana one or more times during the past 30 days.

Overall, 6.7% of students used amphetamines or methamphetamines one or more times during their life.

Overall there is significant different amongst males and females and to recognize of 72.1% prevalence of students who are using drugs before the age 14 years is extremely high. As such indication for exposure to behaviour of using drugs is significantly vulnerable.

Hygiene

Table 5. Hygiene-related behaviours, by sex, TONGA, 2017.

Question	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Usually cleaned or brushed their teeth more than one time per day during the past 30 days	92.3 (90.9 – 93.5)	88.2 (85.8 – 90.2)	96.5 (95.4 – 97.3)	Yes
Never or rarely washed their hands before eating during the past 30 days	15.7 (14.0 – 17.6)	20.8 (18.0 – 24.0)	10.5 (8.9 – 12.4)	Yes
Never or rarely washed their hands after using the toilet or latrine during the past 30 days	8.3 (7.1 – 9.7)	11.9 (10.0 – 14.1)	4.6 (3.7 – 5.7)	Yes
Never or rarely used soap when washing their hands during the past 30 days	20.4 (18.7 – 22.2)	26.3 (23.6 – 29.1)	14.5 (12.7 – 16.6)	Yes

*95% confidence interval.

In **TONGA**, the percentage of students who usually cleaned or brushed their teeth more than one time per day during the past 30 days was 92.3%.

Overall, 15.7% of students never or rarely washed their hands before eating during the past 30 days.

Overall, 8.3% of students never or rarely washed their hands after using the toilet or latrine during the past 30 days.

Overall, 20.4% of students never or rarely used soap when washing their hands during the past 30 days.

Overall 96.5% of females are significantly cleaned or brushed their teeth more than one time per day during the past 30 days than 88.2% of males. Females are also significantly lower standard on never or rarely washed hands before eating and after using the toilets and used soap during the past 30 days in comparison to males.

Mental Health

Table 6. Mental health issues among students, by sex, TONGA, 2017.

Behaviour	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Most of the time or always felt lonely during the past 12 months	13.9 (12.7 – 15.3)	12.3 (10.6 – 14.3)	15.8 (14.3 – 17.5)	No
Most of the time or always were so worried about something that they could not sleep at night during the past 12 months	14.6 (13.2 – 16.1)	14.7 (12.7 – 16.9)	14.7 (13.0 – 16.6)	No
Ever seriously considered attempting suicide during the past 12 months	12.6 (11.3 – 14.0)	14.0 (12.2 – 16.1)	11.2 (9.6 – 13.0)	No
Made a plan about how they would attempt suicide during the past 12 months	14.3 (12.8 – 16.1)	15.8 (13.8 – 18.1)	12.3 (10.6 – 14.2)	No
Actually attempted suicide one or more times during the past 12 months	16.5 (14.7 – 18.5)	19.3 (16.3 – 22.6)	13.7 (12.0 – 15.7)	Yes
Had no close friends	14.6 (12.8 – 16.6)	15.6 (13.4 – 18.3)	13.2 (11.2 – 15.5)	No
Among students who most of the time or always worried about something that they could not sleep at night during the past 12 months, the percentage who were bullied on one or more days during the past 30 days	49.5 (43.2 – 55.8)	52.2 (43.2 – 61.0)	46.9 (40.2 – 53.8)	No

*95% confidence interval.

In **TONGA**, 13.9% of students most of the time or always felt lonely during the past 12 months.

Overall, 14.6% of students most of the time or always were so worried about something that they could not sleep at night during the past 12 months.

Overall, 12.6% of students ever seriously considered attempting suicide during the past 12 months.

Overall, 14.3% of students made a plan about they would attempt suicide during the past 12 months.

Overall, 16.5% of students actually attempted suicide one or more times during the past 12 months.

Overall, 14.6% of students had no close friends.

Among students most of the time or always had been so worried about something that they could not sleep at night during the past 12 months, 49.5% were bullied on one or more days during the past 30 days.

Males are significantly attempting suicide of 19.3% which are relative high and to recognize in time comparing to 13.7% females. However they are both vulnerable for attempting suicide. The 49.5% of students are couldn't sleep at night and worried because they bullied on one or days during the last 30 days is high.

Physical Activity

Table 7. Physical activity among students, by sex, TONGA, 2017.

Behaviour	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Not physically active (for at least 60 minutes) on any day during the past 7 days	24.8 (23.2 – 26.4)	23.9 (21.6 – 26.4)	25.6 (23.4 – 28.0)	No
Were physically active for a total of at least 60 minutes per day on 5 or more days during the past seven days	32.5 (30.7 – 34.3)	34.5 (31.6 – 37.4)	30.5 (28.3 – 32.9)	No
Physically active for a total of at least 60 minutes per day on ALL 7 days during the past seven days	17.9 (16.4 – 19.5)	18.5 (16.3 – 20.8)	17.3 (15.4 – 19.3)	No
Did not walk or ride a bicycle to or from school during the past 7 days	49.1 (47.1 – 51.1)	46.9 (44.3 – 49.6)	51.5 (49.0 – 54.0)	No
Did not attend physical education classes each week during the school year	50.7 (48.1 – 53.3)	46.4 (43.5 – 49.4)	54.8 (51.4 – 58.0)	Yes
Attended physical education class on three or more days each week during this school year	23.4 (21.6 – 25.4)	26.3 (23.9 – 28.8)	20.7 (18.3 – 23.3)	Yes
Went to physical education class on five or more days each week during this school year	14.7 (13.2 – 16.3)	15.4 (13.6 – 17.4)	14.1 (12.2 – 16.2)	No
Spent three or more hours per day during a typical or usual day doing sitting activities(watching tv, playing computer, talking with friends when not in school or doing homework during a typical or usual day	20.9 (19.1 – 22.7)	22.5 (20.3 – 25.0)	19.2 (17.1 – 21.6)	No

*95% confidence interval.

In **TONGA**, 32.5% of students were physically active for a total of at least 60 minutes per day on **five or more** days during the past seven days.

Overall, 17.9% of students were physically active for a total of at least 60 minutes on **all seven** days during the past seven days.

Overall, 24.8% of students were not physically active for at least 60 minutes on any day during the past 7 days.

Overall, 49.1% of students did not walk or ride a bicycle to or from school during the past seven days.

Overall, 50.7% of students did not attend physical education classes each week during this school year.

Overall, 23.4% of students attended physical education class on **three or more** days each week during this school year.

Overall, 14.7% of students went to physical education class on five or more days each week during this school year.

Overall, 20.9% of students spent three or more hours per day during a typical or usual day doing sitting activities, such as watching video and games.

There is no significant different between males and females but to recognize the lower level of physically active for a total of at least 60 mins per day on all seven days on both gender is 17.9%. To recognise the higher level of students that not attended any physical education classes of 50.7% each week during school year. Females are significantly vulnerable of 54.8% than 46.4% for males.

Protective Factors

Table 8. Protective factors among students, by sex, TONGA, 2017.

Protective Factor	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Missed classes or school without permission on one or more of the past 30 days	29.7 (27.7 – 31.7)	34.6 (31.9 – 37.5)	24.6 (22.6 – 26.8)	Yes
Reported most of the students in their school were kind and helpful most of the time or always during the past 30 days	39.4 (37.4 – 41.5)	37.6 (34.4 – 40.8)	41.1 (38.7 – 43.6)	No
Parents or guardians checked to see if their homework was done most of the time or always during the past 30 days	46.5 (44.4 – 48.5)	43.2 (40.3 – 46.1)	50.2 (47.6 – 52.9)	Yes

Parents or guardians understood their problems and worries most of the time or always during the past 30 days	31.9 (29.9 – 34.1)	28.9 (26.5 – 31.4)	35.4 (32.8 – 38.1)	Yes
Parents or guardians really knew what they were doing with their free time most of the time or always during the past 30 days	36.8 (34.7 – 39.1)	31.5 (28.9 – 34.2)	42.4 (39.5 – 45.3)	Yes
Parents or guardians went through their things without their approval never or rarely during the past 30 days	74.3 (72.6 – 75.8)	76.4 (74.0 – 78.6)	72.1 (69.9 – 74.3)	No

*95% confidence interval.

In **TONGA**, 29.7% of students missed classes or school without permission on one or more of the past 30 days.

Overall, 39.4% of students reported that most of the students in their school were kind and helpful most of the time or always during the past 30 days.

Overall, 46.5% of students reported their parents or guardians checked to see if their homework was done most of the time or always during the past 30 days.

Overall, 31.9% of students reported their parents or guardians understood their problems and worries most of the time or always during the past 30 days.

Overall, 36.8% of students reported their parents or guardians really knew what they were doing with their free time most of the time or always during the past 30 days.

Overall, 74.3% of students reported their parents or guardians went through their things without their approval never or rarely during the past 30 days.

Significantly the support and role of the parents and guardians is below 50% which is expected to be much higher. However, there is a significant different between males and females which indicated that females are highly supported and cared by parents and guardians.

HIV-Related Knowledge

Table 9. HIV-related knowledge, by sex, TONGA, 2017.

HIV-Related Knowledge	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Ever heard of HIV infection or the disease called AIDS	56.8 (53.3 – 60.1)	56.6 (52.7 – 60.4)	56.9 (52.6 – 61.2)	No
Taught in any of their classes during this school year about HIV infection or AIDS	27.3 (24.2 – 30.7)	26.8 (23.6 – 30.2)	28.1 (23.9 – 32.6)	No

Taught in any of their classes during this school year how to avoid HIV infection or AIDS	35.4 (32.3 – 38.5)	36.3 (32.8 – 39.8)	34.8 (31.2 – 38.7)	No
Ever talked about HIV infection or AIDS with their parents or guardians	26.4 (24.4 – 28.5)	25.6 (22.8 – 28.6)	27.3 (24.9 – 29.9)	No

*95% confidence interval

In **TONGA**, 56.8% of students had ever heard of HIV infection or the disease called AIDS.

Overall, 27.3% of students were taught in any of their classes during this school year about HIV infection or AIDS.

Overall, 35.4% of students had been taught in any of their classes during this school year how to avoid HIV infection or AIDS.

Overall, 26.4% of students ever talked about HIV infection or AIDS with their parents or guardians.

Addressing of HIV infections or AIDS is 26.4% which is not supported by the parents and guardians to talk about. This is strongly indicated the existence of taboo and traditional influence. The 56.8% of students had ever heard of HIV infections and AIDS. Males and females are not significantly different on HIV issue.

Tobacco Use

Table 10. Tobacco use among students, by sex, TONGA, 2017.

Behaviour	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Among students who ever smoked cigarettes, those who first tried a cigarette before age 14 years	75.2 (70.5 – 79.4)	77.2 (72.1 – 81.7)	71.0 (64.1 – 77.0)	No
Smoked cigarettes on one or more days during the past 30 days	17.7 (15.9 – 19.7)	26.1 (23.1 – 29.4)	9.2 (7.8 – 10.8)	Yes
Used any tobacco products other than cigarettes on one or more days during the past 30 days	14.0 (12.4 – 15.9)	21.9 (19.0 – 25.1)	5.8 (4.6 – 7.3)	No
Used any tobacco on one or more days during the past 30 days	21.8 (19.8 – 24.0)	31.9 (28.6 – 35.4)	11.4 (9.8 – 13.2)	Yes
Students who did not currently use any tobacco product on at least one day during 30 days before the survey	79.5 (77.3 – 81.4)	69.9 (66.4 – 73.1)	89.2 (87.4 – 90.7)	Yes

Among students who smoked cigarettes during the past 12 months, those who tried to quit smoking cigarettes during the past 12 months	79.6 (75.8 – 83.0)	77.6 (72.6 – 82.0)	85.5 (77.9 – 90.8)	No
Reported people smoked in their presence on one or more days during the past seven days	53.1 (51.3 – 54.9)	56.7 (54.1 – 59.2)	49.4 (41.7 – 51.7)	Yes
Had parents or guardians who used any form of tobacco	37.5 (35.7 – 39.3)	36.1 (33.5 – 38.8)	39.0 (36.7 – 41.4)	No

*95% confidence interval.

In **TONGA**, among students who ever smoked cigarettes, 75.2% of students first tried a cigarette before age 14 years.

Overall, 17.7% of students smoked cigarettes on one or more days during the past 30 days.

Overall, 14.0% of students used any tobacco products other than cigarettes on one or more days during the past 30 days.

Overall, 21.8% of students used any tobacco on one or more days during the past 30 days.

Overall, 79.6% of students who did not currently use any tobacco product on at least one day during 30 days before survey.

Among students who smoked cigarettes during the past 12 months, 79.6% of students tried to stop smoking cigarettes during the past 12 months.

Overall, 53.1% of students reported people smoked in their presence on one or more days during the past seven days.

Overall, 37.5% of students had parents or guardians who used any form of tobacco.

The exposure to second hand smoking is significant high of 53.1% and males are most vulnerable than females. Tobacco using by males are significantly more than double in comparison to females. The exposure to smoking before the age of 14 is an alarming rate of 75.2% on both males and females.

Violence and Unintentional Injury

Table 11. Violence and unintentional injury among students, by sex, TONGA, 2017.

Behaviour	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	

Were physically attacked one or more times during the past 12 months	48.6 (46.4 – 50.8)	53.6 (50.8 – 56.4)	43.2 (40.5 – 46.1)	Yes
Were in a physical fight one or more times during the past 12 months	38.7 (36.3 – 41.3)	48.9 (45.8 – 52.1)	27.9 (25.2 – 30.9)	Yes
Were seriously injured one or more times during the past 12 months	49.1 (46.4 – 51.7)	57.6 (54.1 – 61.0)	40.3 (37.2 – 43.5)	Yes
Among students who were seriously injured during the past 12 months, those whose most serious injury was a broken bone or dislocated joint	20.1 (17.7 – 22.7)	22.6 (19.4 – 26.1)	15.8 (12.8 – 19.3)	Yes
Among students who were seriously injured during the past 12 months, those who most serious injury was caused by a motor vehicle accident or being hit by a motor vehicle	9.1 (7.4 – 11.2)	10.5 (8.3 – 13.4)	7.2 (5.1 – 10.2)	No
Were bullied on one or more days during the past 30 days	38.8 (35.9 – 41.8)	44.6 (40.6 – 48.7)	33.0 (30.0 – 36.2)	Yes
Among students who were bullied during the past 30 days, those who were bullied most often by being hit, kicked, pushed, shoved around, or locked indoors	30.7 (27.7 – 33.9)	34.5 (30.5 – 38.6)	26.0 (22.1 – 30.3)	Yes

*95% confidence interval.

In TONGA, 48.6% of students were physically attacked one or more times during the past 12 months.

Overall, 38.7% of students were in a physical fight one or more times during the past 12 months.

Overall, 49.1% of students were seriously injured one or more times during the past 12 months.

Among students who were seriously injured during the past 12 months, a broken bone or dislocated joint was the most serious injury among 20.1% of students.

Among students who were seriously injured during the past 12 months, a motor vehicle accident or being hit by a motor vehicle was the cause of the most serious injury among 9.1% of students.

Overall, 38.8% of students were bullied on one or more days during the past 30 days.

Among students who were bullied during the past 30 days, being hit, kicked, pushed, shoved around, or locked indoors was the most common form of bullying among 30.7% of students.

The students were more likely to injure from related behaviour of violence and unintentional injury as significantly indicated of 48.6% were physically attacked, 38.7% physical fight and 49.1% were

seriously injured. Students were bullied one or more days was 38.8% and 30.7% of students in a form of hit, kicked, pushed, shoved and locked indoors. Males are significantly involved on violence and unintentional injury compare to females.

Physical difficulties

Table 12. Physical difficulties, by sex, TONGA, 2017.

Physical difficulties	Total % (CI)*	Sex		Statistical significance between males and females? (Yes or No)
		Male % (CI)	Female % (CI)	
Had some difficulty seeing, even if wearing glasses	13.9 (12.6 – 15.2)	14.2 (12.4 – 16.2)	13.5 (11.7 – 15.5)	No
Had some difficulty hearing, even if using a hearing aid	17.0 (15.6 – 18.5)	19.6 (17.5 – 21.8)	14.4 (12.6 – 16.3)	Yes
Had some difficulty walking or climbing steps	19.2 (17.7 – 20.8)	18.4 (16.4 – 20.7)	19.9 (18.0 – 22.1)	No
Had some difficulty remembering or concentration	24.7 (23.0 – 26.5)	25.3 (22.8 – 28.1)	24.1 (22.0 – 26.4)	No
Had some difficulty with self-care	15.0 (13.5 – 16.6)	17.3 (15.3 – 19.4)	12.8 (11.1 – 14.7)	Yes

*95% confidence interval

In TONGA, 13.9% of students were having some difficulty seeing and even if wearing glasses.

Overall, 17.0% of students who had some difficulty hearing and even if using a hearing aid.

Overall, 19.2% of students who had some difficulty walking or climbing steps.

Overall, 24.7% of students who had some difficulty remembering or concentration.

Overall, 15.0% of students who had some difficulty with self-care.

Overall, Tonga Students are surely having some physical difficulty on seeing, walking or climbing steps and remembering or concentration with no significant different between males and females. However, Males are significantly had some difficulty on hearing even using a hearing aid of 19.6% than Females of 14.4%. Again, Males of 17.3% are significantly had some difficulty with self-care in comparison of 12.8% of Females.

Conclusions:

Tonga GSHS has important results and interesting findings again to look at for appropriate and effective intervention to overcome risk behaviours and protective factors for students as follows.

○ *Alcohol, Tobacco and Drug use*

Tonga students were at risk of early exposure to drinking alcohol is around one third, smoking cigarette and drug use is third quarter. In every 3 out of 5 students were in the presence of people smoking and 2 out of 5 had parent smoking. The influence of friendship in drinking alcohol is around one third of the students.

○ *Dietary Behaviour*

There is a significant difference on both gender whereas 2 out of 5 students were overweight while 1 out of 5 students were obese. The students usually ate fruits and vegetables are below average. The drinking of carbonated soft drinks and eating from a fast food restaurant is more than half of students. School canteen that served breakfast and lunch is more than half of students are accessed.

○ *Hygiene*

Tonga students who usually cleaned or brushed their teeth less than one time per day during the past 30 days was in one out of ten and the same as washing hands before eating and washing hands after using the toilet or latrine.

○ *Mental Health*

Tonga students of almost one out of ten were ever seriously considered attempting suicide and made a plan during the past 12 months. Half of the students were most of the time or always worried about something that they could not sleep at night during the past 12 months, the percentage who were bullied on one or more days during the past 30 days.

○ *Physical Activity*

Tonga students of almost two ten of students was physically active for a total of at least 60 minutes on all seven days of the week which is far below average. One ten of the students went to physical education class on five or more days each week during school year. One quarter of students spent three or more hours per day doing sitting activities.

○ *Protective Factors*

Tongan parents or guardians understood the student problems and worries most of their time is around one third. Around half of the students that parents or guardians have checked to see if their homework was done most of the time or always during the past 30 days. One third of students missed classes or school without permission once or more of the past 30 days.

○ *HIV-Related knowledge*

Tonga parents or guardians hardly talked about HIV infection or AIDS is around one quarter of students. Three out of five students had ever heard of HIV infection or the disease called AIDS. Taught in school of HIV infection and AIDS is around one third of students.

- *Violence and Unintentional Injury*

Half of Tongan students were physically attacked and involved in physical fight one or more times during the past 12 months. Again half of students were seriously injured in the past 12 months. Two out of five students being bullied on the last 30 days is half of them. One ten of students were in motor vehicle driven by someone who had been drinking alcohol.

- *Physical difficulties*

Tongan students are around one out of ten were having some difficulty on seeing and even if wearing glasses and almost the same with self-care difficulty and to be recognized of the high difficulty among boys in comparison to girls. Students with hearing and walking/ climbing steps are around one out of five. Remembering and concentration difficulties are around one out of four students. Therefore physical difficulties are surely happened among Tongan students.

Recommendation:

Tonga again is found the baseline dataset on health related risk behaviours and protective factors particularly the age group of 12 -17 years. The findings of Tonga GSHS warrant a call to action to overcome the emerging health behaviours which has been continuously occurred and generally improving population health. The close collaboration and integration at the policy level for successful interventions is surely required to be on board.

Tonga GSHS thus recommend that strengthening of strategic actions and programs for Health Promoting School in regards to the alarming health factors is considerably recognized. The Education Departments and affiliated parties are required to engage closely on the matters arising.

1. To disseminate the Tonga GSHS results to stakeholders and collaborate to develop and implement interventions to support the reduction of behavioural risk factors and improve protective factors for health.

Data dissemination is required to present to School Departments and related organizations in order to draw attention for the current health factors that facing with students. The national workshop is essential to host for Schools to realize the current and significant data for the health of the Tonga students.

2. To develop standardized targets, assessment criteria, and interventions for the Health Promoting Schools programme in order to strengthen efforts to improve student health.

An effective ACTIO PLAN will formulate and energize solutions to counter the risks and behaviours of students. It has to be included in the current strategies for health promoting school and also at the ending childhood obesity intervention.

The role of the schools and parents is surely needed on planning of strategic action that appropriate and effective for the overcoming of the health problems lie around school health. School is solely known their individual health consequences and they are needed to come together and take action.

School clinic and Health Officer should be established within school system.

3. To integrate opportunities to build capacity among and increase involvement of teachers, parents and community members to support healthy lifestyles.

Hence the advocacy conducted then promoting of healthy lifestyle through increasing physical within school time is required. Growing of organic veggies at school backward and selling of healthy food at the canteen or food stools at the school ground is needed to enhancing. Tobacco is prohibited for student within school ground and teachers whereas smoking at school ground during school time is under the current Tobacco Act.

For every school should be required to employ a school teacher for physical education to consistently running the classes during school days and to strengthen movement and fitness curriculum.