

Chuuk Rapid Youth Survey

2019 Report



CHUUK STATE GOVERNMENT DEPARTMENT OF HEALTH SERVICES STATE OF CHUUK FEDERATED STATES OF MICRONESIA 96942

P.O. BOX 400 PHONE • (691) 330-2216/2217 FAX • (691) 330-2320

Dr Bosco Buliche• Director Anthony Mori• Deputy Director Friday Shomour• Administrator

Letter of Endorsement

The Rapid High School Survey results present findings from the 2019 survey. The results give us a clear picture of the trends of Non-communicable Disease and Sexual health behavior risk factors amongst our youth in Chuuk. I strongly encourage public health programs and other stakeholders to use this as a guide in planning their interventions and policy making.

Thank you,

br Bosco Buliche Director Department of Health Services, Chuuk St.

Table of Contents

Summary	4
Youth Surveillance in Chuuk	5
Background	6
Methodology	7
Sample Summary	8
Tobacco Smoking	9
E-cigarette Use	10
Tobacco Chewing	11
Betel Nut Chewing	12
Alcohol Use	13
Overweight/Obesity	14
Reproductive Health	15
Nutrition: Sugar Sweetened Beverages (SSBs)	16
Nutrition: Fruit	17
Nutrition: Vegetables	18
Discussion/Recommendations	19
Acknowledgements	20
Annex	21-23

Summary

The aim of this report is to present current prevalence of certain risk factors for developing noncommunicable disease (NCD), sexually transmitted infections, and teenage pregnancy among high school youth in Chuuk. These data can be used to better understand the burden of these risk factors, monitor trends, and determine who is at greatest risk for poor health in order to improve health among Chuuk youth through the development of targeted evidence-based interventions. The table below compares selected comparable indicators in Chuuk to Guam, Commonwealth of the Northern Mariana Islands (CNMI), and the United States (US). Green shading represents the location with the "best" prevalence, followed by orange shading, and red shading

	Chuuk	Guam*	CNMI*	US*
Substance Use	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Smoking	17.4	11.9	10.8	6.0
(within past 30 days)	(15.3-19.4)	(19.5-14.8)	(9.6-12.0)	(5.0-7.2)
Tobacco chewing	19.2	11.4	16.1	3.8
(within past 30 days)	(17.1-21.4)	(8.8-14.7)	(14.7-17.5)	(3.2-4.6)
Alcohol use	13.1	25.3	26.1	29.2
(within past 30 days)	(11.3-15.1)	(21.3-29.8)	(24.4-27.9)	(27.3-31.2)
Sexual Health				
Ever had sexual intercourse	22.1	37.0	35.8	38.4
	(19.8-24.4)	(32.1-42.2)	(34.0-37.8)	(35.4-41.6)
Did not use condom at last	71.0	58.4	61.0	45.7
intercourse (among sexually active)	(65.4-76.2)	(50.5-65.9)	(56.8-65.2)	(43.4-48.0)
Did not use any method to prevent pregnancy at last intercourse (among sexually active)	56.3 (50.3-62.2)	35.7 (28.2-43.9)	27.1 (23.4-31.1)	11.9 (10.3-13.9)
Overweight/obesity				
Had obesity	20.2	23.8	21.6	15.5
	(18.0-22.5)	(20.9-26.9)	(20.1-23.2)	(13.8-17.3)
Were overweight	24.4	18.3	15.9	16.1
	(22.1-26.8)	(15.7-21.2)	(14.5-17.3)	(14.9-17.5)
Nutrition/PA				
Did not eat fruit in the past 7 days	27.5	9.6	5.9	6.3
	(25.0-30.1)	(7.6-12.0)	(5.1-6.8)	(5.4-7.3)
Did not eat vegetables in the past	25.6	11.1	6.9	7.9
7 days	(23.2-28.2)	(9.2-13.4)	(6.0-7.9)	(7.1-8.7)
Drank a sugary drink 2+ times	27.0	12.1	9.7	9.3
per day	(24.5-29.6)	(9.7-14.9)	(8.7-10.9)	(7.7-11.2)

*Guam, CNMI, and US data from the 2019 Youth Risk Behavior Survey (YRBS)

Youth Surveillance in Chuuk

The Rapid Youth High School Survey in Chuuk can inform us about the current prevalence of key NCD risk factors, as well as tell us about trends. These trends are important because they tell us whether or not our current efforts are effective at improving risk factor indicators among youth.

When we compare the 2017 Chuuk Rapid High School Survey data to the current 2019 data, we see that there have been significant improvements in smoking, tobacco chewing, betel nut use, and alcohol use. This suggests that the current efforts to reduce substance use among high school youth are successful and should be strengthened. However, it should be noted that tobacco use (smoking and chewing) in Chuuk is still higher than in the US, Guam, and CNMI. The most concerning trend is the significant increase in overweight/obesity from 2017 to 2019. This suggests that current strategies to address overweight/obesity in youth are not working and should therefore be improved or replaced with more effective, evidence-based strategies.

	2017%	2019%	Comparison*
Smoking (within past 30 days)	19.4	17.4	
Tobacco chewing (within past 30 days)	24.8	19.2	$\mathbf{\Psi}$
Betel nut chewing (within past 30 days)	39.8	30.7	\checkmark
Alcohol use (within past 30 days)	17.4	13.1	$\mathbf{\bullet}$
Overweight/obesity	40.4	44.6	1

*Chi-square tests were used to test for statistically significant differences between 2017 and 2019; p-values<0.05 were considered statistically significant; \uparrow = indicator got significantly worse from 2017 to 2019; \bigcirc = indicator showed no significant change from 2017 to 2019; \checkmark =indicator got significantly better from 2017 to 2019

Background

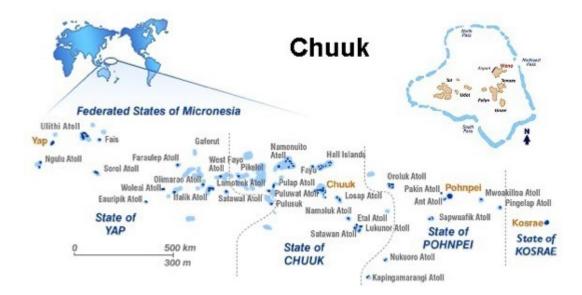


Figure 1. Map of Chuuk

Source: https://thorfinn.net/diving-chuuk/

Chuuk is one of the four states of the Federated States of Micronesia (FSM) located in the Pacific Ocean east of the Philippines. Chuuk is made up of several island groups with a total land area of 46 square miles. Most of the population lives within Chuuk Lagoon that contains the State Capitol, Weno. As of 2010, the total population of Chuuk was 48,654, making it the most populated state in FSM.

In 2011, Chuuk State declared a State of Health Emergency due to the epidemic of noncommunicable diseases (NCDs). This is largely due to loss of longevity, quality of life, and loss of workforce productivity due to NCDs. There has been a shift away from traditional lifestyle and foods that negatively impacts the culture and health of Chuukese. The majority of the adult population in Chuuk is now overweight or obese, about one-third of adults smoke tobacco, and use of betel nut (generally with tobacco) has recently become common.

In 2010, the Pacific Island Health Officers' Association (PIHOA) declared a regional health emergency due to the epidemic of NCDs in the US-Affiliated Pacific Islands (USAPIs). The USAPIs include American Samoa, Commonwealth of the Mariana Islands (CNMI), Guam, Federated States of Micronesia (FSM), Republic of Palau, and Republic of the Marshall Islands. Stemming from this regional declaration of emergency, all six of these USAPIs agreed upon a regional NCD surveillance framework that includes core NCD and risk factor indicators that need to be routinely and consistently collected across the region in order to monitor the progress of local and regional NCD responses. This includes the following core youth indicators to be measured among high school youth every two years: 30-day tobacco smoking, 30-day tobacco chewing, 30-day alcohol use, and overweight/obesity (by physical measurement of height and weight). Therefore, Chuuk adopted the Chuuk Rapid Youth High School Survey beginning in 2017 to be implemented biannually.

Methodology

The Chuuk Rapid Youth High School Survey was developed by the Chuuk State Department of Health Services (Chuuk DHS) with assistance from PIHOA (see Annex for copy of the survey). This survey instrument collects data on core youth NCD indicators (30-day smoking, tobacco chewing, betel nut chewing, and alcohol use and overweight/obesity). Additionally, in 2019 Chuuk added additional questions on nutrition and reproductive health. The Chuuk Rapid High School Youth Survey is conducted at all high schools in Chuuk. All students in grades 9-12 present on the survey day are eligible to participate in the survey.

The Chuuk DHS staff conducted the 2019 survey from October-December, 2019. Prior to data collection, all staff were trained on survey administration to include physical measurements of height and weight. Chuuk DHS staff first recorded demographic information of each student in Section 1 of the paper survey form, then took height and weight and also recorded these in Section 1. Section 2 of the paper survey form was then completed by students confidentially and turned in anonymously to collect information on substance use, nutrition, and reproductive health. Afterwards, Chuuk DHS staff entered the paper surveys into a Microsoft Excel database. PIHOA provided technical support for cleaning and analyzing these data.

Data on substance use are all based on self-report. Measured height and weight were used to calculate Body Mass Index (BMI). BMI percentiles were used to determine BMI categories for those students under 17 years old. Adult BMI calculations were used for those students 18 and older. Overall, all students were classified as underweight, healthy, overweight, or obese.

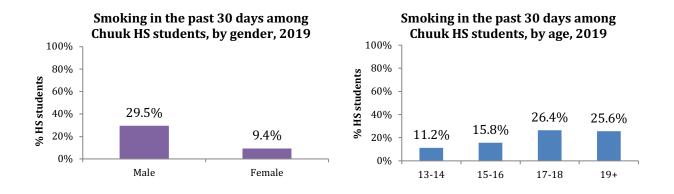
7

Demographic Characteristics	N	%
Gender		
Male	516	39.6%
Female	788	60.4%
Age		
13-14	342	26.2%
15-16	618	47.4%
17-18	301	23.1%
19+	43	3.3%
Grade		
9	468	35.9%
10	364	27.9%
11	289	22.2%
12	183	14.0%
School		
Berea Christian High School	52	4.0%
Chuuk High School	483	37.0%
Mortlocks High School	29	2.2%
Nomusofo Junior High School	21	1.6%
Pollap Junior High School	14	1.1%
Polowat High School	24	1.8%
PPO Junior High School	10	0.8%
SCA High School	183	14.0%
SDA High School	5	0.4%
SNHS Fefen	82	6.3%
Southern Namoneas High School	141	10.8%
Weipot High School	120	9.2%
Xavier High School	140	10.7%
Total	1304	100.0%

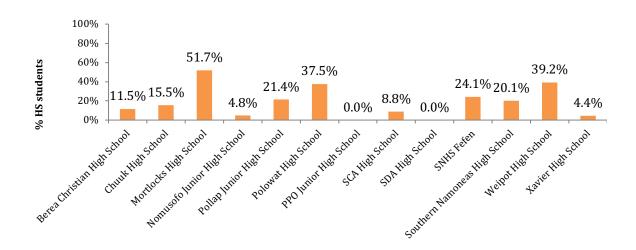
Sample Characteristics (N=1,304)

Smoking

17.4% of high school students in Chuuk are current smokers (smoked in the past 30 days). Male students have a higher smoking prevalence than female students (29.5% vs. 9.4%). Additionally, smoking prevalence increases with age, with the prevalence increasing from ages 13-14 (11.2%) to ages 19+ (25.6%). There also appears to be a lot of variation in smoking prevalence between schools ranging from 0% (PPO Junior High School and SDA High School) to 51.7% (Mortlocks High School).

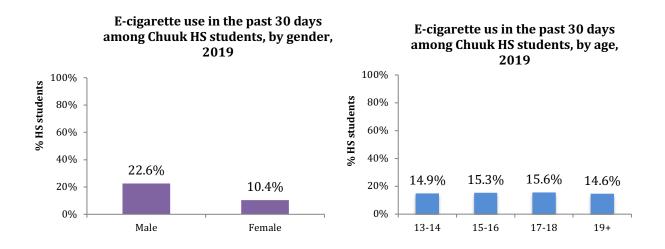


Smoking in the past 30 days among Chuuk HS students, by school, 2019

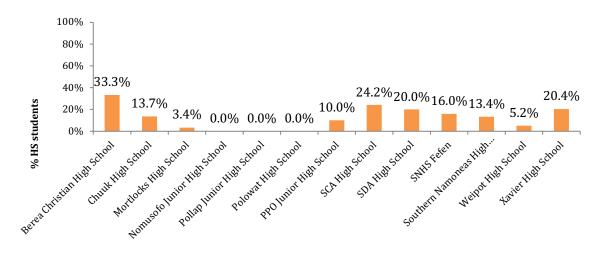


E-Cigarette Use

15.2% of high school students in Chuuk are current e-cigarette users (used e-cigarettes in the past 30 days). Male students have a higher e-cigarette use prevalence than female students (22.6% vs. 10.4%). E-cigarette use prevalence was similar across all age groups. E-cigarette use prevalence varies by school with highest prevalence at Berea Christian High School (33.3%) and SCA High School (24.2%).

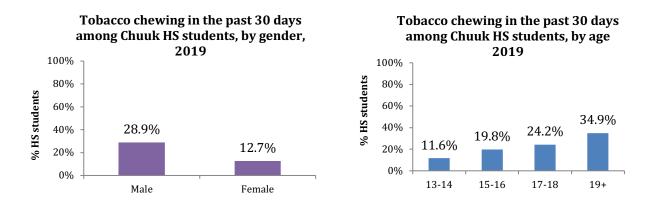


E-cigarette use in the past 30 days among Chuuk HS students, by school, 2019

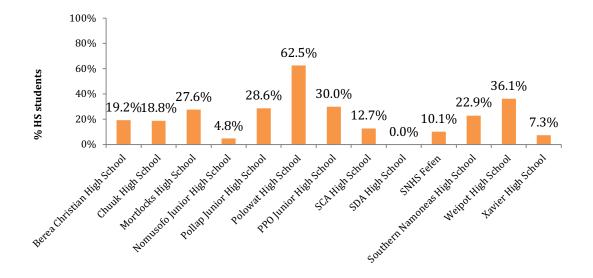


Tobacco Chewing

19.2% of high school students in Chuuk are current tobacco chewers (chewed tobacco in the past 30 days). This includes chewing tobacco with or without betel nut. Male students have a higher tobacco chewing prevalence than female students (28.9% vs. 12.7%). Tobacco chewing prevalence increases with age, tripling from ages 13-14 (11.6%) to ages 19+ (34.9%). Tobacco chewing prevalence varies by school with the highest prevalence at Polowat High School (62.5%).

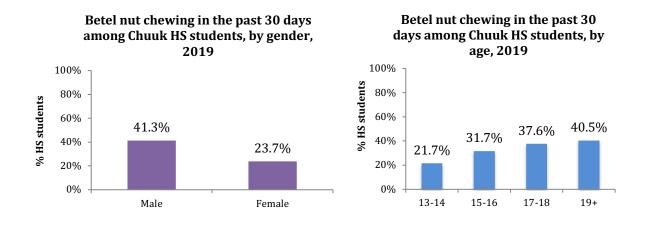


Tobacco chewing in the past 30 days among Chuuk HS students, by school, 2019

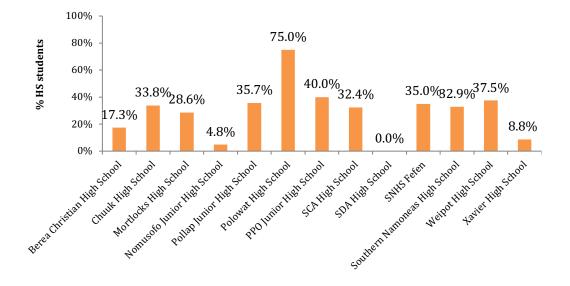


Betel Nut Chewing

About one-third (30.7%) of high school students in Chuuk are current betel nut chewers (chewed betel nut in the past 30 days). Betel nut chewing prevalence is higher among male students (41.3%) compared to female students (23.7%). Betel nut chewing prevalence also increases with age, almost doubling from ages 13-14 (21.7%) to ages 19+ (40.5%). Variation between schools is similar to that observed with tobacco chewing, with the highest prevalence also at Polowat High School (75.0%).

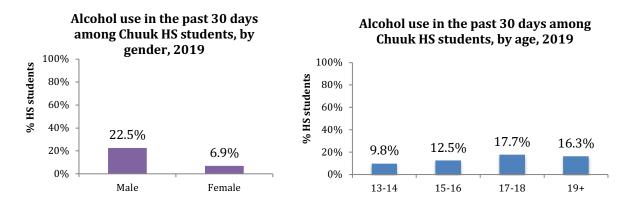


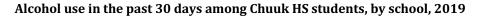
Betel nut chewing in the past 30 days among Chuuk HS students, by school, 2019

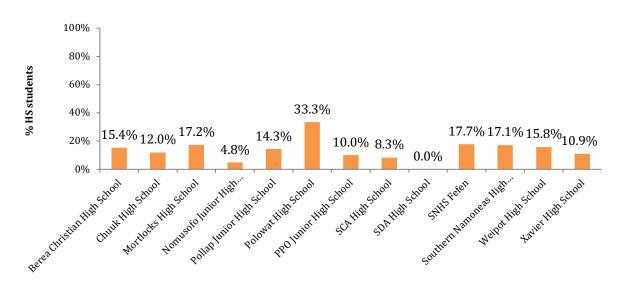


Alcohol Use

13.1% of high school students in Chuuk have used alcohol in the past 30 days. Alcohol use prevalence is higher among male students (22.5%) compared to female students (6.9%). Like other substances, prevalence increases with age, from ages 13-14 (9.8%) to ages 19+ (16.3%). Alcohol use prevalence was highest at Polowat High School at 33.3%.

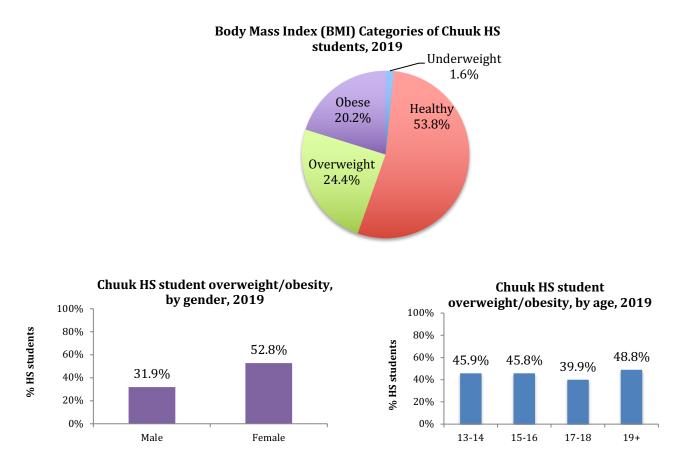




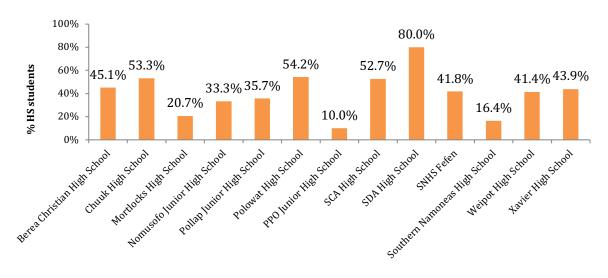


Overweight/Obesity

Almost half (44.4%) of high school students in Chuuk are overweight or obese. Prevalence of overweight/obesity is much higher among female students (52.8%) compared to male students (31.9%). Overweight/obesity is high among all age groups. SDA High School had the highest prevalence of overweight/obesity at 80.0%.



Chuuk HS student overweight/obesity, by school, 2019



Reproductive Health

Reproductive Health Factors	Ν	%
Ever had sexual intercourse*		
Yes	284	22.1%
No	1003	77.9%
Number of sexual partners**		
1 person	95	33.6%
2 people	45	15.9%
3 people	43	15.2%
4 people	35	12.4%
5 people	17	6.0%
6 or more people	48	17.0%
Age at first intercourse**		
11 years old or younger	25	8.8%
12 years old	32	11.3%
13 years old	39	13.8%
14 years old	57	20.1%
15 years old	51	18.0%
16 years old	35	12.4%
17 years old or older	44	15.5%
Condom use during last intercourse**		
Yes	82	29.0%
No	201	71.0%
Method used to prevent pregnancy during last intercourse**		
No method used	156	56.3%
Birth control pills	19	6.9%
Condoms	65	23.5%
IUD or implant	4	1.4%
Shot, patch, or birth control ring	0	0.0%
Withdrawal	13	4.7%
Calendar	3	1.1%
Other	17	6.1%

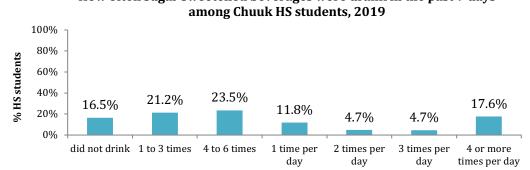
*17 students missing data on sexual intercourse

**1 student missing data on number of sexual partners, age at first intercourse, condom use, and 7 missing data on birth control use

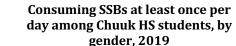
About one in four (22.1%) of high school students in Chuuk are sexually active. Two-thirds (66.4%) of the sexually active students report two or more lifetime sexual partners. Only 29.0% of sexually active students reported using a condom at last intercourse. Overt half (56.3%) of sexually active students reported using no method to prevent pregnancy at last intercourse. More effective methods to prevent pregnancy (such as birth control pills, IUD/implants, shot/patch/ring) were uncommon.

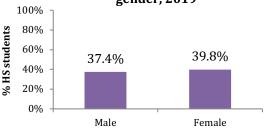
Nutrition: Sugar Sweetened Beverages (SSBs)

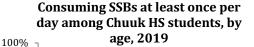
The majority (83.5%) of high school students in Chuuk consumed sugar sweetened beverages (SSBs) in the past 7 days. Almost two out of five (38.8%) of high school students consumed SSBs at least once per day in the past 7 days. Daily SSB consumption was similar among males and females. Daily SSB consumption was lowest among those 19 and older (28.6%). Daily SSB consumption varies by school ranging from 27.5% at Berea Christian High School to 100.0% at Mortlocks High School.

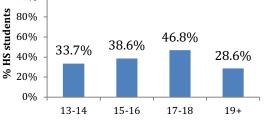


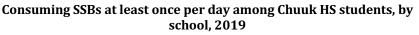
How often sugar sweetened beverages were drank in the past 7 days

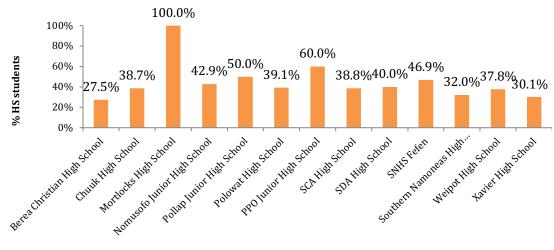






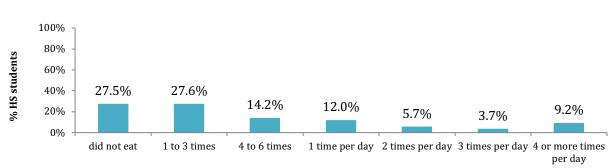




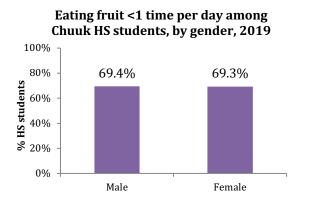


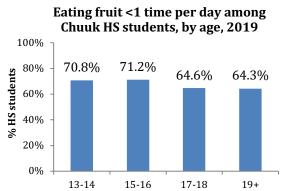
Nutrition: Fruit

Fewer than one-third 30.6% of Chuuk high school students eat fruit every day. Almost one-third (27.5%) of high school students in Chuuk reported not eating any fruit in the past 7 days. Low fruit consumption was similar across gender and age groups. Low fruit consumption was highest among those high school students 19 and older at 74.6%. There was variation in low fruit consumption prevalence by school ranging from 100.0% at SDA High School to 3.4% at Mortlocks High School.

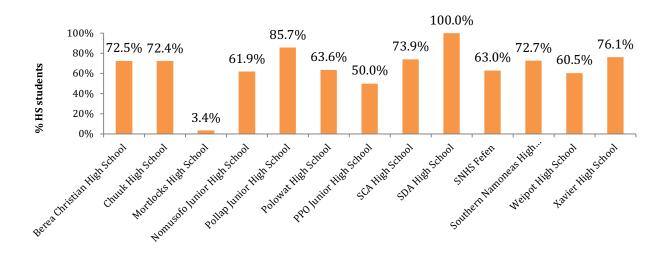


How many times fruit was eaten in past 7 days among Chuuk HS students, 2019



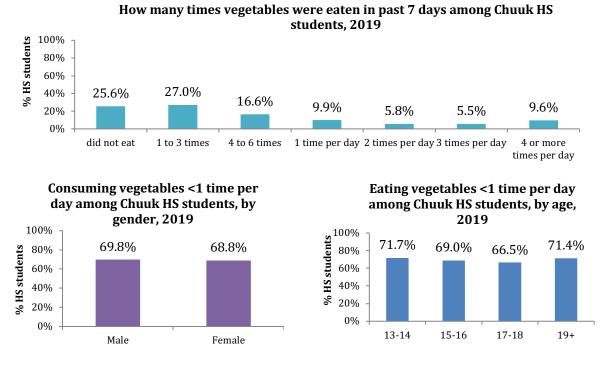


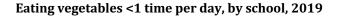
Eating fruit <1 time per day among Chuuk HS students, by school, 2019



Nutrition: Vegetables

Fewer than one-third (30.8%) of Chuuk high school students eat vegetables every day. About one out of four (25.6%) of Chuuk high school students reported not eating any vegetables in the past seven days. Low vegetable consumption was similar across gender and age groups. There was variation in low vegetable consumption prevalence by school ranging from 87.0% at Polowat High School to 3.6% at Mortlocks High School.







Discussion

Based on the data presented in this report, it is clear that many risk factors are highly prevalent among youth in Chuuk and some of these risk factors are getting worse. This indicates a great need to evaluate current efforts in order to develop more effective, evidence-based school programs.

Tobacco use through smoking and chewing (with betel nut) is a significant concern given that these prevalence rates are much higher than the US, Guam, and CNMI, and **one out of four high school youth are using tobacco**. There are clear trends in these use patterns, highlighting the need to prioritize certain high schools in Chuuk for intervention. Additionally, substance use begins early in Chuuk, so interventions in youth prior to high school should be considered.

Almost half of high school youth in Chuuk are overweight or obese. This is especially concerning among female high school students because over half are overweight or obese. Due to the fact that youth who are overweight or obese in adolescence are more likely to be overweight or obese in adulthood compared to healthy weight adolescents, it is important to prevent overweight/obesity in high school students.

Daily consumption of sugar sweetened beverages (84%) is higher than daily consumption prevalence of fruit (31%) and vegetables (31%). Physical activity programs in schools, sports programs, school nutrition, and healthy school food policies are effective ways to prevent overweight/obesity among youth.

One out of five high school students in Chuuk is sexually active. **Among these sexually active students, fewer than one-third regularly use condoms, and less than half are using methods to prevent pregnancy**. Effective modern methods such as birth control pills, implants, IUDs, and Depo are highly under-utilized by students. Education about and access to methods to prevent sexually transmitted infections and teenage pregnancy are greatly needed among high schools in Chuuk.

Recommendations

Overall, the Chuuk Rapid High School Survey continues to collect much needed data from Chuuk high school youth. It is highly recommended that **this survey continues to be conducted on a regular**, **biannual basis**.

High school programs around substance use, nutrition, physical activity, and reproductive health should be strategically evaluated. Additionally, Chuuk State and FSM National policies regarding these topics should also be reviewed. These data can be a powerful asset to motivate higher level change, especially regarding tobacco, alcohol, and unhealthy food legislation that potential to greatly reduce risk factor prevalence among youth in Chuuk. **Without high-impact action, these risk factors will continue to rise** among youth, and continue into adulthood, resulting in high adult risk factor and disease prevalence that greatly contribute to morbidity and mortality in Chuuk and burden the healthcare system.

Acknowledgements

Akius Herman, NCD Community Health Worker Alexandria Keina Mailo, NCD Data Clerk Alivios William, Department of Education Director Anfina William, NCD Community Health Worker Arichiro Kony, NCD Community Health Worker Carl Martin, Principal, XHS Eleanor Setik, Chief of Public Health Jason Reiong, Principal, CHS Julio Marar, DHS Director Larry Ekinon, NCD Nurse Moria Shomour, NCD Program Manager Nely Raymond, NCD Community Health Worker Petrin Petewon, NCD Nurse Sharry Osi, NCD Community Health Worker Dr. Haley Cash, PIHOA Dr. Mark Durand, PIHOA Denita Beyond, Principal, BCS Wayne Olap, Principal, SCA Steiohsy Manuel, Principal, Mizpah Tommy Ungeni, Principal, SNHS-Tonoas Narciso Francis, Principal, SNHS-Fefan Principal, NJH Principal, Weipat

<u>Annex</u>

Chuuk State High School Core Risks Questionnaire 2019

Students will first be interviewed and measured by trained NCD Survey Staff to complete questions 1-11 in the shaded box. Then, students will complete questions independently, and then submit forms into a designated box. No names are to be collected.

ID:

SECTION 1: To be completed by NCD Survey Staff:

1. Date (M/D/Y):		/.		_/_	
2. Name of School:					
3. Grade:	9	10	11	12	(circle one)
4. Name of Class or Section:					
5. Gender:	Male	Male Female		le	(circle one)
6. Age (years)			year	s	
7. Residence (Municipality):					
8. Staff Member Initials (Questions)					
9. Height:			cm		
10. Weight:			kg		
11. Staff Member Initials (Measurement):			_		

SECTION 2: To be completed by Student after SECTION 1:

This section is for the student to complete (Do not put your name on this sheet. All information is confidential.)

12. During the past 30 days , did you smoke any tobacco?	Yes	No	(circle one)
13. During the past 30 days , did you have at least one drink of alcohol ?	Yes	No	(circle one)
14. During the past 30 days , did you chew <u>at least one betel nut</u>?	Yes	No	(circle one)
15. During the past 30 days , did you <u>chew</u> any tobacco (with or without betelnut)?	Yes	No	(circle one)
16. During the past 30 days , did you use any <u>electronic vapor products</u> including e-cigarettes, vapes, vape pens, e-cigars, <u>ehookahs, hookah pens,</u> and mods.	Yes	No	(circle one)

Chuuk State High School Core Risks Questionnaire 2019

ID:

17. During the past 7 days, how many times did you eat fruit? (circle one)

- A. I did not eat fruit during the past 7 days
- B. 1 to 3 times during the past 7 days
- C. 4 to 6 times during the past 7 days
- D. 1 time per day
- E. 2 times per day
- F. 3 times per day
- G. 4 or more times per day
- 18. During the **past 7 days**, how many times did you **eat vegetables** (do not count starches such as potatoes, taro, yam, tapioca)? (circle one)
- A. I did not eat vegetables during the past 7 days
- B. 1 to 3 times during the past 7 days
- C. 4 to 6 times during the past 7 days
- D. 1 time per day
- E. 2 times per day
- F. 3 times per day
- G. 4 or more times per day
- 19. During the **past 7 days**, how many times did you **drink a can**, **bottle**, **or glass of a sugary drink** such as soda, iced tea, sports drink, coffee drink, or juice drink? (circle one)
- A. I did not eat drink sugary drinks during the past 7 days
- B. 1 to 3 times during the past 7 days
- C. 4 to 6 times during the past 7 days
- D. 1 time per day
- E. 2 times per day
- F. 3 times per day
- G. 4 or more times per day

Chuuk State High School Core Risks Questionnaire 2019 ID:

20. Have you ever had sexual intercourse? Yes No (circle one) IF NO, STOP HERE!

21. How old were you when you had sexual intercourse for the first time? (circle one)

A. 11 years old or younger

- B. 12 years old
- C. 13 years old
- D. 14 years old
- E. 15 years old
- F. 16 years old
- G. 17 years old or older

22. During your life, with how many people have you had sexual intercourse? (circle one)

- A. 1 person
- B. 2 people
- C. 3 people
- D. 4 people
- E. 5 people
- F. 6 or more people

23. The last time you had sexual intercourse, did you or your partner use a condom? (circle one)

Yes

No

24. The **last time you had sexual intercourse**, what one method did you or your partner use to prevent pregnancy? (circle one) (Select only one response.)

A. No method was used to prevent pregnancy

- B. Birth control pills
- C. Condoms
- D. An IUD (such as Mirena or ParaGard) or implant (such as Impanon or Nexplanon)
- E. A shot (such as Depo-Provera), patch (such as Ortho Exra), or birth control ring (such as NuvaRing)
- F. Withdrawal
- G. Calendar
- H. Other