



Yap State Youth Survey

2023/2024 Report

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The State of Yap
Department of Health Services
P.O. Box 148, Colonia, Yap 96943
Federated States of Micronesia
Telephone #: 011 (691) 350-2110



Mogethin and greetings from the Yap Department of Health Services.

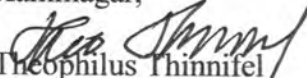
I am pleased to endorse the publication of the 2023-2024 Yap State Youth Survey Report, which highlights critical insights into the health and well-being of Yap's youth, identifying key areas of concern such as substance use, mental health challenges, obesity, and reproductive health behaviors.

The findings presented in this report underscore the urgent need for targeted interventions to improve the physical, mental, and reproductive health of our youth. Notably, the prevalence of tobacco and e-cigarette use, early onset of substance use, and rising obesity rates call for immediate and evidence-based strategies to promote healthier lifestyles. Additionally, the report brings attention to the alarming rates of depression, suicidal ideation, and risky sexual behaviors among our youth, emphasizing the importance of creating supportive environments and implementing effective family planning and mental health programs.

I commend the collaborative efforts of the Department of Education, Yap's high schools, public health programs, and community partners in conducting this survey. The insights provided by the student participants are invaluable in shaping future health policies and programs.

We stand ready to collaborate in addressing the challenges outlined in this report and to work collectively to implement its recommendations.

Kammarar,


Theophilus Thinnifel

Director

Yap Department of Health Services

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Summary

This report presents the current prevalence of key non-communicable disease, mental health, and reproductive health indicators among high school youth in Yap. 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 Yap. This information can support the development of targeted, evidence-based interventions to improve the health of Yap’s youth population.

The table below compares selected indicators in Yap to Guam, CNMI, and the US. Green shading represents the location with the “best” prevalence, followed by yellow, orange, and red shading representing increasingly less favorable levels of prevalence.

	Yap	Guam*	CNMI*	US*
Substance Use	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Smoking (within past 30 days)	40.4 (36.2-44.7)	11.9 (14.8-19.5)	6.9 (6.0-8.0)	3.8 (3.3-4.4)
Tobacco chewing (within past 30 days)	48.2 (43.9-52.6)	11.4 (8.8-14.7)	9.0 (7.9-10.1)	2.5 (2.0-3.0)
Alcohol use (within past 30 days)	28.5 (24.7-32.6)	25.3 (21.3-29.8)	26.0 (24.3-27.8)	22.7 (21.1-24.4)
E-cigarette use (within past 30 days)	28.4 (24.6-32.5)	35.2 (30.0-40.8)	26.4 (24.7-28.2)	18.0 (16.3-19.8)
Behavioral Health				
Felt sad or hopeless almost every day for 2 weeks or more	35.7 (31.6-39.9)	46.9 (43.0-50.8)	54.6 (52.7-56.5)	42.3 (41.0-43.7)
Seriously considered attempting suicide	12.2 (9.6-15.3)	23.8 (20.3-27.6)	29.6 (27.9-31.3)	22.2 (21.1-23.3)
Reproductive Health				
Ever had sexual intercourse	34.7 (30.7-39.0)	37.0 (32.1-42.2)	28.5 (26.7-30.3)	30.0 (27.9-32.1)
Did not use condom at last intercourse (among sexually active)	52.0 (44.4-59.5)	58.4 (50.5-65.9)	61.9 (57.1-66.6)	48.2 (45.7-50.6)
Did not use any method to prevent pregnancy at last intercourse (among sexually active)	46.7 (39.2-54.2)	35.7 (28.2-43.9)	25.0 (20.7-29.8)	13.7 (12.1-15.5)
Overweight/obesity				
Had obesity	14.8 (11.9-18.1)	23.8 (20.9-26.9)	23.4 (21.7-25.1)	16.3 (15.1-17.7)
Were overweight	23.5 (19.9-27.3)	18.3 (15.7-21.2)	19.2 (17.7-20.8)	16.0 (15.2-16.8)

* US and CNMI data are from the 2021 YRBS and Guam data are from the 2019 YRBS (most current data available at the time of this report)

Youth Surveillance in Yap

The Rapid Youth High School Survey in Yap can inform us about the current prevalence and trends of key NCD risk factors among Yap youth. These trends are important because they tell us whether our current efforts are effective at targeting risk factors among youth.

When we compare the 2016 Yap Youth Survey data to the current 2024 data, we see that the prevalence of tobacco chewing, betel nut chewing, and alcohol use have significantly decreased. There were no significant changes in smoking, depression, and pregnancy prevention prevalence from 2016 to 2024. Overweight/obesity prevalence increased significantly from 2016 to 2024. Although there were some positive changes, many indicators remain unchanged or have gotten worse. Overall, the prevalence of these risk factors remains quite high in Yap. These data suggest that more evidence-based strategies are needed to improve health among Yap youth.

	2016%	2024%	Comparison*
Smoking (within past 30 days)	39.0	40.4	○
Tobacco chewing (within past 30 days)	60.7	48.2	↓
Betel nut chewing (within past 30 days)	75.8	68.4	↓
Alcohol use (within past 30 days)	45.5	28.5	↓
Overweight/obesity	33.4	38.3	↑
Depression	38.0	35.7	○
Did not use method to prevent pregnancy	44.2	46.7	○

↑ = indicator got significantly worse from 2016 to 2024

○ = indicator showed no significant change from 2016 to 2024

↓ = indicator got significantly better from 2016 to 2024

*Chi-square tests were used to test for statistically significant differences between 2016 and 2024 (p-values<0.05 were considered statistically significant).

Methodology

The Yap Rapid Youth High School Survey was developed by the Yap State Department of Health Services (Yap DHS) with assistance from PIHOA. This survey instrument collects data on core youth NCD indicators (30-day smoking, tobacco chewing, betel nut chewing, e-cigarette use, alcohol use, and overweight/obesity). Additionally, beginning in 2021, Yap added additional questions on mental health and reproductive health.

The Yap Youth Survey was conducted in all high schools in Yap to include Yap High School (YHS), Yap Catholic High School (YCHS), Yap Seventh Day Adventist School (YSDA), Outer Islands High School (OIHS), Faith Christian Academy (FCA), Yap International Christian School (YICS), and Neighboring Islands Community High School (NICHS). All students in grades 9-12 present on the survey day were eligible to participate in the survey.

Trained health teams were sent to all the high schools to conduct the survey uniformly. YCHS students' height and weight were taken from the Wa'ab Community Health Center (WCHC) records when WCHC staff made a recent visit to the school; the remainder of the survey was conducted as per the survey protocols.

The survey was conducted between November 2023 and May 2024 (2023-2024 school year).

The first part of the survey was completed by staff and included demographics, measured height, and measured weight. Then, students completed the second part of the survey on their own. This included questions on substance use, mental health, and sexual behavior. The completed surveys were then turned in anonymously. Afterward, Yap DHS staff entered the paper surveys into a Microsoft Excel database. PIHOA provided technical support for cleaning and analyzing these data, as well as writing the report.

A majority of the data collected were based on self-report, excluding height and weight measurements that were used to calculate Body Mass Index (BMI). Youth BMI percentiles were used to determine BMI categories for those students under 18 years. Adult BMI calculations were used for those students 18 and older. All students were classified as underweight, healthy, overweight, or obese.

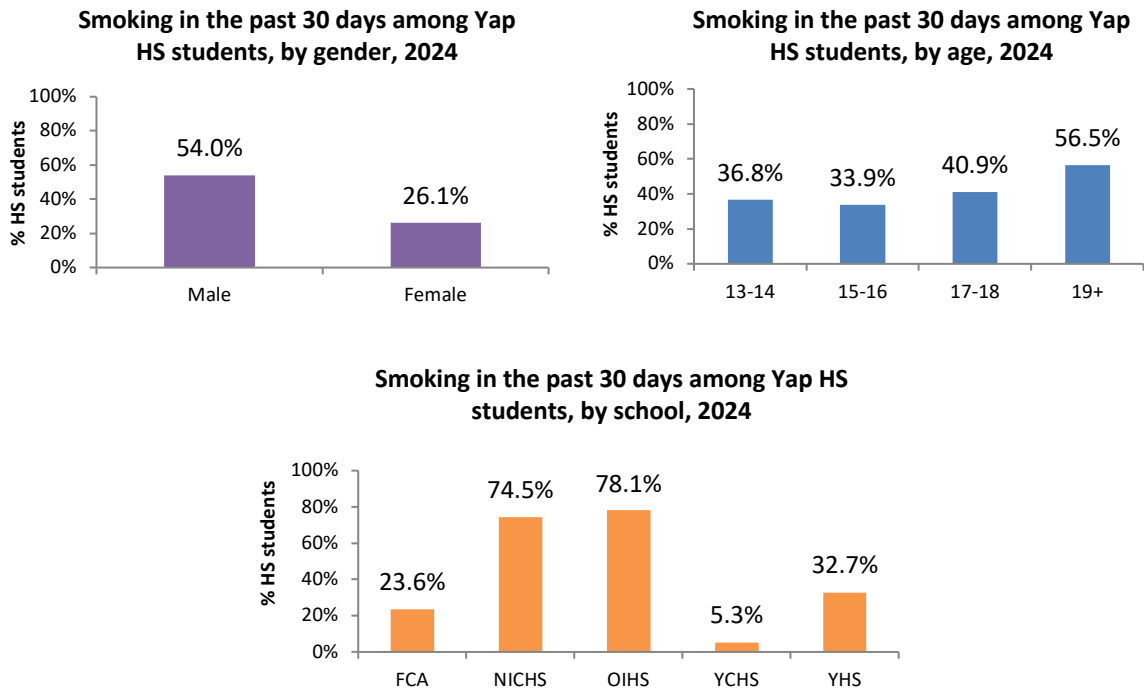
Sample Characteristics (N=534)

Demographic Characteristics	N	%
Gender*		
Male	264	50.2%
Female	262	49.8%
Age		
14 or younger	68	12.8%
15-16	178	33.6%
17-18	199	37.6%
19+	85	16.0%
Grade		
9	167	31.3%
10	132	24.7%
11	115	21.5%
12	120	22.5%
School		
Faith Christian Academy (FCA)	56	10.5%
Neighboring Island Community High School (NICHHS)	94	17.6%
Outer Island High School (OIHS)	65	12.2%
Yap Catholic High School (YCHS)	76	14.2%
Yap High School (YHS)	226	42.3%
Yap International Christian School (YICS)	12	2.3%
Yap Seventh-Day Adventist (SDA)	5	0.9%
Total	534	

*8 students missing data on gender, 4 students missing data on age

Smoking

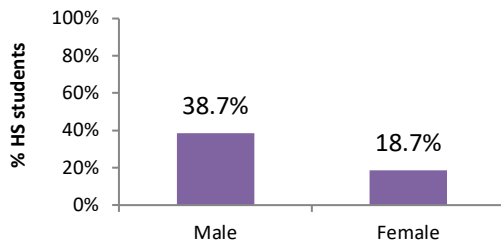
About two out of five (40.4%) of high school students in Yap are current smokers (smoked in the past 30 days). Male students have a higher smoking prevalence than female students (54.0% vs. 26.1%). There is a large jump in smoking prevalence from 13–14-year-olds (36.8%) to those 19 and older (56.5%). There also appears to be a lot of variation in smoking prevalence between schools, with the highest prevalence at NICHS (74.5%) and OIHS (78.1%).



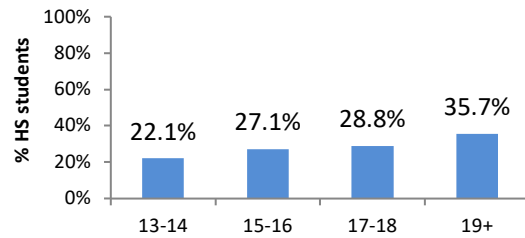
E-Cigarette Use

Almost one out of three (28.4%) high school students in Yap 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 (38.7% vs. 18.7%). E-cigarette use prevalence is highest among those 19 and older at 35.7%. E-cigarette use prevalence varies by school with the highest prevalence at YHS (36.3%).

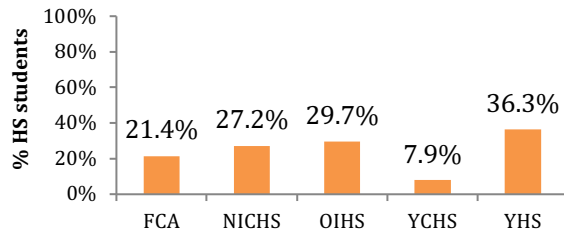
E-cigarette use in the past 30 days among Yap HS students, by gender, 2024



E-cigarette use in the past 30 days among Yap HS students, by age, 2024



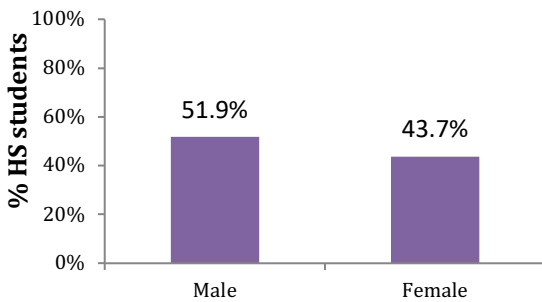
E-cigarette use in the past 30 days among Yap HS students, by school, 2024



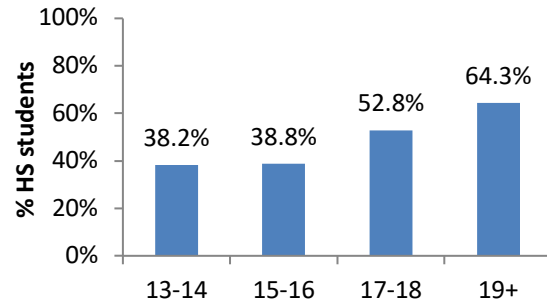
Tobacco Chewing

Almost half (48.2%) of high school students in Yap 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 (51.9% vs. 43.7%). Tobacco chewing prevalence increases with age, from 38.2% among 13–14-year-olds to 64.3% among those 19 and older. Tobacco chewing prevalence is lowest at YCHS at 13.3%.

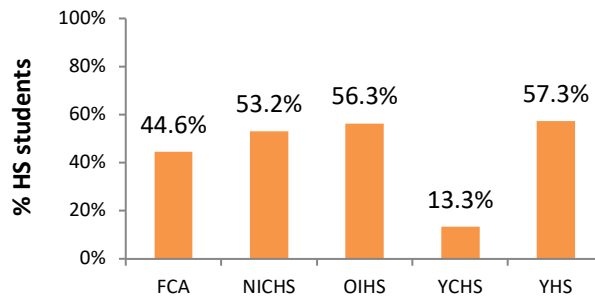
Tobacco chewing in the past 30 days among Yap HS students, by gender, 2024



Tobacco chewing in the past 30 days among Yap HS students, by age 2024



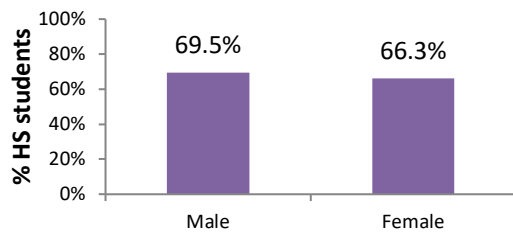
Tobacco chewing in the past 30 days among Yap HS students, by school, 2024



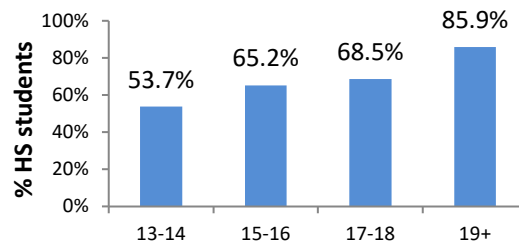
Betel Nut Chewing

About two out of three (68.4%) high school students in Yap are current betel nut chewers (chewed betel nut in the past 30 days). Betel nut chewing prevalence is similar among male and female students (69.5% and 66.3%, respectively). Betel nut chewing prevalence increases with age, with a majority of youth 19 and older chewing betel nut (85.9%). Betel nut chewing prevalence is lowest at YCHS at 39.5%.

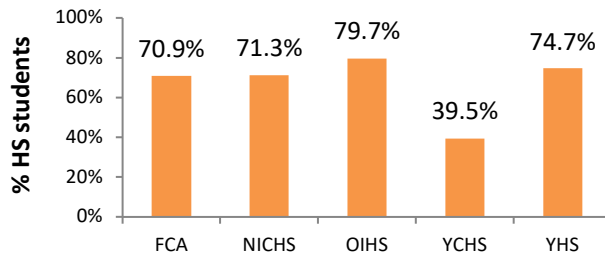
Betel nut chewing in the past 30 days among Yap HS students, by gender, 2024



Betel nut chewing in the past 30 days among Yap HS students, by age, 2024



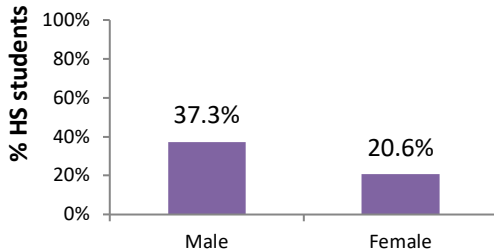
Betel nut chewing in the past 30 days among Yap HS students, by school, 2024



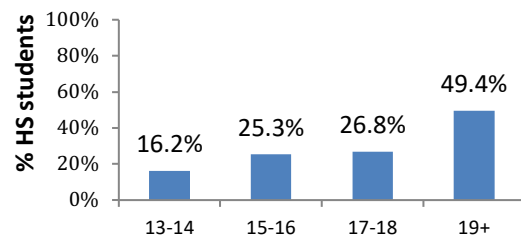
Alcohol Use

Almost one-third (28.5%) of high school students in Yap have used alcohol in the past 30 days. Alcohol use prevalence is higher among male students (37.3%) compared to female students (20.6%). Like other substances, alcohol use prevalence increases with age, with a prevalence of 16.2% among those aged 13-14 and 49.4% among those 19 and older. Alcohol use prevalence varies by school, with prevalence highest at NICHS (37.2%) and lowest at YCHS (6.6%).

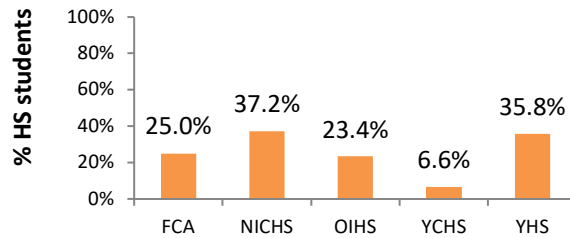
Alcohol use in the past 30 days among Yap HS students, by gender, 2024



Alcohol use in the past 30 days among Yap HS students, by age, 2024



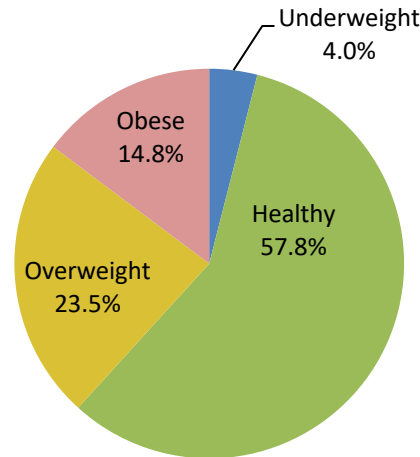
Alcohol use in the past 30 days among Yap HS students, by school, 2024



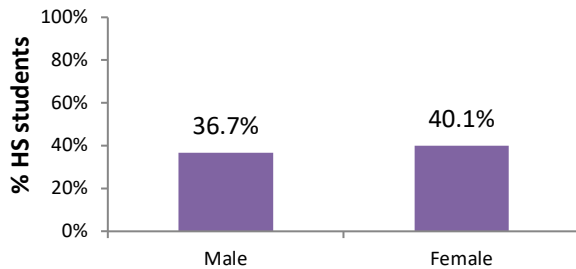
Overweight/Obesity

About two out of five (38.3%) high school students in Yap are overweight or obese. The prevalence of overweight/obesity is higher among female students (40.1%) compared to male students (36.7%). Overweight/obesity prevalence is highest among those 19 and older at 45.9%. Overweight/obesity prevalence varies by school, with the lowest prevalence at OIHS (27.4%) and FCA (30.9%) and the highest prevalence at YCHS (50.0%).

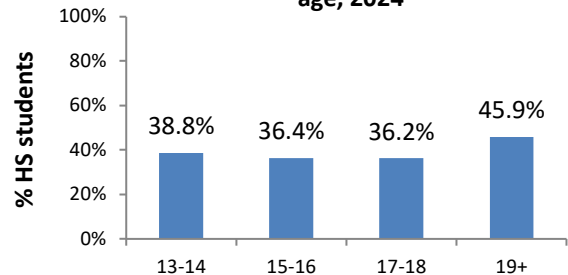
Body Mass Index (BMI) Categories of Yap HS students, 2024



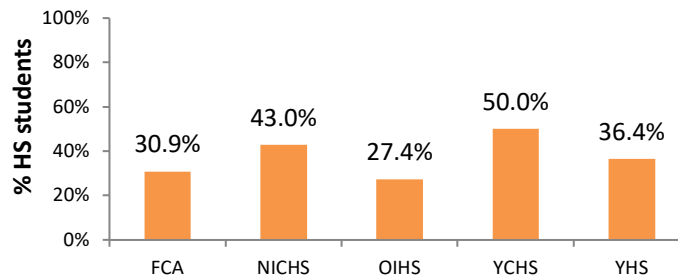
Yap HS student overweight/obesity, by gender, 2024



Yap HS student overweight/obesity, by age, 2024



Yap HS student overweight/obesity, by school, 2024

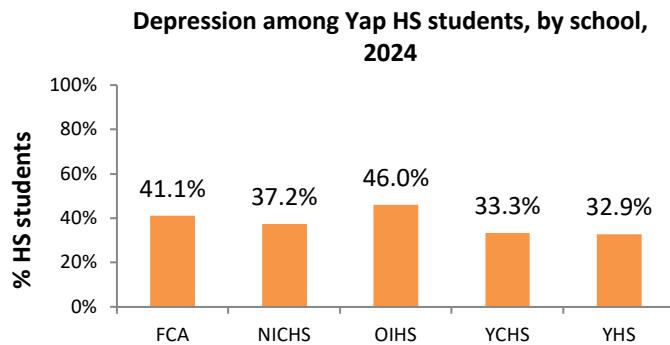
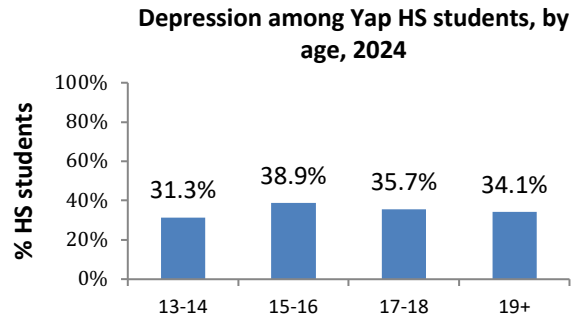
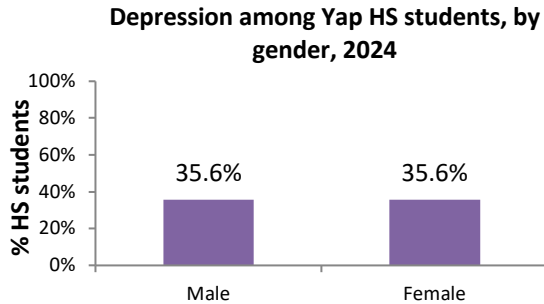


Mental Health

Mental Health Indicators	N	%
During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?*		
Yes	189	35.7%
No	341	64.3%
During the past 12 months, did you ever seriously consider attempting suicide?		
Yes	65	12.2%
No	467	87.8%
During the past 12 months, did you make a plan about how you would attempt suicide?		
Yes	59	11.3%
No	463	88.7%
During the past 12 months, how many times did you actually attempt suicide?		
0 times	452	82.8%
1 time	24	4.4%
2 or 3 times	23	4.2%
4 or 5 times	1	0.2%
6 or more times	8	1.5%
*4 students missing data on depression, 2 students missing data on suicide consideration, 12 missing data on suicide plan, and 26 missing data on suicide attempts		

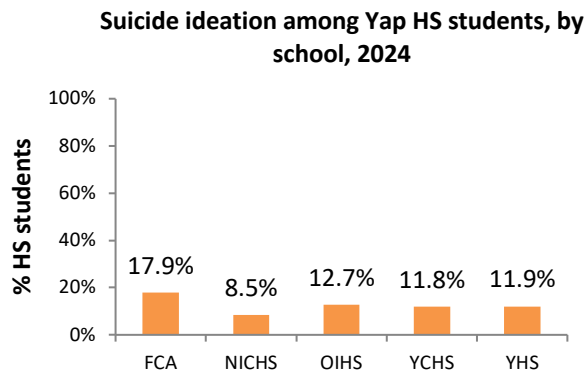
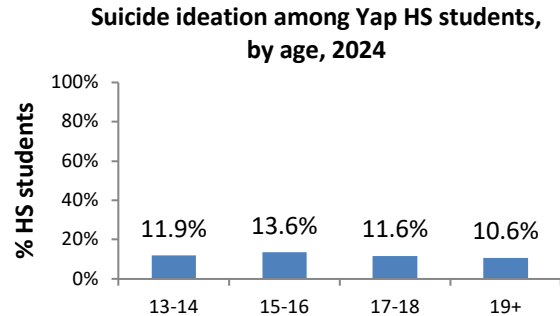
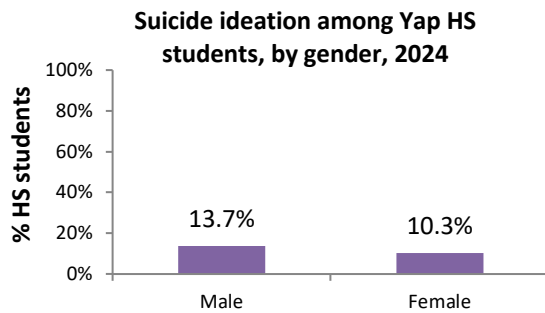
Depression

More than one out of three (35.7%) youth reported that they felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities, which is an indicator for depression. Prevalence of depression is similar among female and male students, and there is little variation by age. Depression prevalence is highest at OIHS at 46.0%.



Suicide Ideation

More than one out of ten (12.2%) youth reported that they seriously considered attempting suicide in the past 12 months. Suicidal ideation prevalence is slightly higher among male students (13.7%) compared to female students (10.3%) and there is little variation by age. Prevalence of suicidal ideation is highest among students at FCA at 17.9%.



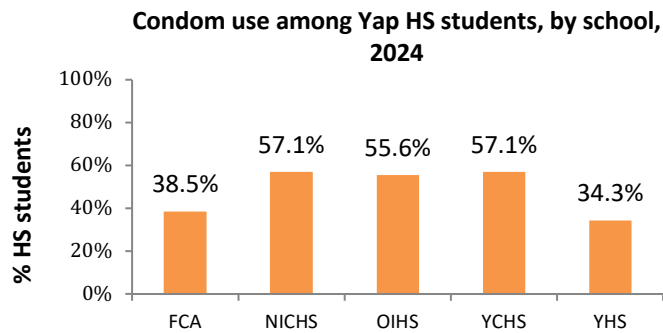
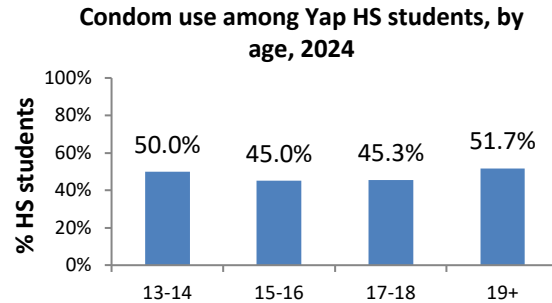
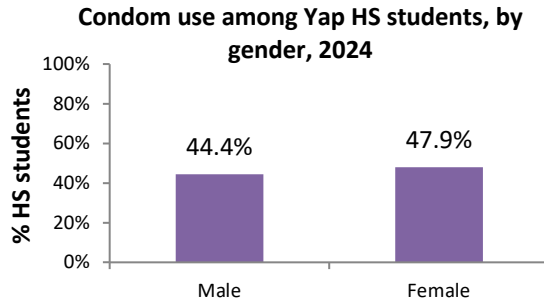
Reproductive Health

Reproductive Health Factors	N	%
Ever had sexual intercourse*		
Yes	180	34.7%
No	338	65.3%
Number of sexual partners*		
1 person	47	25.5%
2 people	38	20.7%
3 people	23	12.5%
4 people	20	10.9%
5 people	14	7.6%
6 or more people	42	22.8%
Age at first intercourse*		
11 years old or younger	6	3.3%
12 years old	6	3.3%
13 years old	17	9.3%
14 years old	20	10.9%
15 years old	39	21.3%
16 years old	44	24.0%
17 years old or older	51	27.9%
Condom use during last intercourse*		
Yes	86	48.0%
No	93	52.0%
Method used to prevent pregnancy during last intercourse*		
No method used	84	46.7%
Birth control pills	2	1.1%
Condoms	77	42.8%
IUD or implant	0	0.0%
Shot, patch, or birth control ring	3	1.7%
Withdrawal	12	6.7%
Calendar	1	0.6%
Other	1	0.6%

*16 students missing data on ever had sexual intercourse, 12 missing data on number of partners, 13 missing data on age at first intercourse, 17 missing data on condom use, 16 missing data on pregnancy prevention methods

Reproductive Health

Fewer than half (48.0%) of sexually active youth reported that they used a condom during their last intercourse. Female students reported slightly higher condom use prevalence than male students (47.9% and 44.4%, respectively). Condom use prevalence is highest among 13–14-year-olds (50.0%) and those 19 and older (51.7%). Condom use prevalence is lowest at FCS (38.5%) and YHS (34.3%)



Discussion

Based on the data presented in this report, it is clear that many risk factors for non-communicable diseases, mental health, and reproductive health are highly prevalent among youth in Yap. Tobacco use through smoking and chewing (with betel nut) is a significant concern given that these prevalence rates are much higher than other jurisdictions in the region and the **majority of high school youth (62%) are using tobacco**. E-cigarette use has also risen rapidly, and now almost one-third of youth in Yap are using e-cigarettes. **One out of three high school students in Yap are using alcohol**. Clear trends in these usage patterns highlight the need to prioritize certain high schools in Yap for intervention. Furthermore, since substance use often begins early, interventions should be considered for youth prior to high school.

Overweight/obesity prevalence among high school youth is high in Yap, and this issue appears to be getting worse. Overweight/obesity prevalence is high even among the younger high school youth, suggesting that early childhood intervention is necessary. Evidence-based programs and policies that increase physical activity and improve dietary habits should be considered in Yap.

Many students reported symptoms of depression and suicidal ideation. **Depression and suicidal ideation are high among all age groups, suggesting that intervention is needed beginning at young ages.** Providing healthy, supportive environments at school is important for promoting good mental health.

More than one out of three high school students in Yap are sexually active. **Fewer than half of the students reported using a condom at last intercourse, and almost half did not use any method to prevent pregnancy at last intercourse.** Effective modern birth control methods and safe sex practices such as birth control pills, implants, IUDs, and Depo are highly under-utilized by students. These risky behaviors could result in sexually transmitted infections and unplanned pregnancies among youth in Yap. Evidence-based family planning programs targeting youth should be considered in Yap.

Acknowledgements

Dept. of Education: Director Dominic Fanasog and his staff for statistics and initial communications with the neighboring island high schools

Faith Christian Academy (FCA): Principal Mecina Hadley and staff

Neighboring Island Community High School (NICHHS): Principal Stanley Retogral and staff

Outer Island High School (OIHS): Principal John Ugulmar and staff

Yap Catholic High School (YCHS): Principal Gilippin Pongliyab and staff

Yap High School (YHS): Principal Arnold Yokbay

Yap Seventh-Day Adventist (SDA) School: Principal Claire Joab and staff

Public Health Programs: Personal Responsibility Education Program, Tobacco Program, Cancer Program, Behavioral Health and Wellness Program, Sexually Transmitted Infections Prevention Program, Communicable Disease and Noncommunicable Disease Program staff and volunteers

Wa'ab Healthy Lifestyle Coalition for their guidance and support

All parents who allowed their children to contribute to this important survey and last but not least, the brave students who gave their time and honest answers so that they, their peers, and future youth can have a better tomorrow!