Sexual behaviour and substance abuse among students in CNMI

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Abstract

Health and social problems related to substance abuse and unprotected sexual activity seem to have increased in recent years in the Commonwealth of the Northern Mariana Islands (CNMI). While most efforts to prevent these problems have emphasised education in the teen population, it has been difficult to direct these efforts in the absence of good data about the distribution, prevalence and age of onset of teen risk behaviour.

Between September 1993 and March 1994 a survey questionnaire was administrated to 974 students in CNMI, that is about 65% of public school students. Rates of self-reported sexual activity, tobacco and illicit drug use and HIV and AIDS were obtained. The total student population in CNMI was 600 in private schools and 1500 in public schools.

Rates of tobacco smoking, illicit drug use, alcohol consumption, and unprotected sexual intercourse were high, even at the junior high school level. Many students lacked a fundamental understanding of HIV transmission and susceptibility and the health implication of their behaviour. Students in CNMI faced a wide array of behavioural hazards. Efforts to prevent initiation of risk behaviours must begin at the elementary and junior high school levels.

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Introduction

There is concern that the youth of the Commonwealth of the Northern Mariana Islands (CNMI) is increasingly susceptible to tobacco, drugs, alcohol, accidents, social problems, AIDS and sexually transmitted diseases (STD), and unwanted pregnancies. However, the extent of these risk behaviours has not been known. Quantifying the extent of these risks allows prevention measures to be directed in an appropriate manner by educators, policy makers, and health care providers. In response to this need for more information the Science Office of the Public School System and the Division of Public Health studied a sample of junior and senior high school in the CNMI.

Methods

Between September 1993 and March 1994, questionnaires were distributed to the counsellors at Tinian and Hopwood (in Saipan) junior high schools and the public senior high schools on Tinian, Rota and Saipan. Questionnaires were not distributed to Rota 7th, 8th and 9th grade students. The questionnaire consisted of 21 questions which addressed five areas: tobacco, alcohol and illegal drug use; HIV/AIDS knowledge and attitude; and sexual activity. Questionnaires were distributed to all students present on the survey day at each school. At Mariana High School, for logistical reasons, the survey was administrated to students in the health classes only. No effort was made to give the questionnaire to students who where absent from school on the day of the survey. School dropouts and about 600 private school students were excluded from the study sample. The survey questions were designed to be self explanatory and no special instructions were given to students, other than assurance that the survey was anonymous. The completed questionnaires were analysed with *Epi Info* version 5. The results are presented for each risk behaviour variable followed by a comparison with other existing known data sources.

Results

A total of 974 students completed the questionnaire out of a total 2100 in all of CNMI. Those from Mariana High School and Tinian High School, Mariana-Hopwood Junior High on Saipan (453) and Rota High School were inadvertently mixed before data entry so it is not possible to report the results from these schools separately. Of the completed questionnaires, 446 were from Mariana and Tinian High Schools (M/THS), 425 were from Mariana-Hopwood and Tinian Junior High

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Table 1. Total number of students enrolled at the study schools by age, sex and ethnicity

Ethnicity and Age Group (years)	Mariana High School		Hopwood Junior High School		Tinian Jr. & Sr. High School		Rota High School	
	Male	Female	Male	Female	Male	Female	Male	Female
Chamorro								
10 to 14	3	1	128	118	12	18	0	1
15 to 19	272	147	5	3	24	30	44	69
20 to 24	3	2	0	0	0	1	2	0
Carolinian								
10 to 14	0	1	51	39	0	2	0	0
15 to 19	81	63	2	3	2	1	0	1
20 to 24	0	0	0	0	0	0	0	0
Other Micronesians								
10 to 14	0	0	25	20	1	0	0	0
15 to 19	95	74	2	1	2	0	1	1
20 to 24	0	1	0	0	0	0	0	0
All Other								
10 to 14	1	0	28	25	1	1	0	1
15 to 19	86	63	3	0	2	3	3	2
20 to 24	0	0	0	0	0	0	0	0

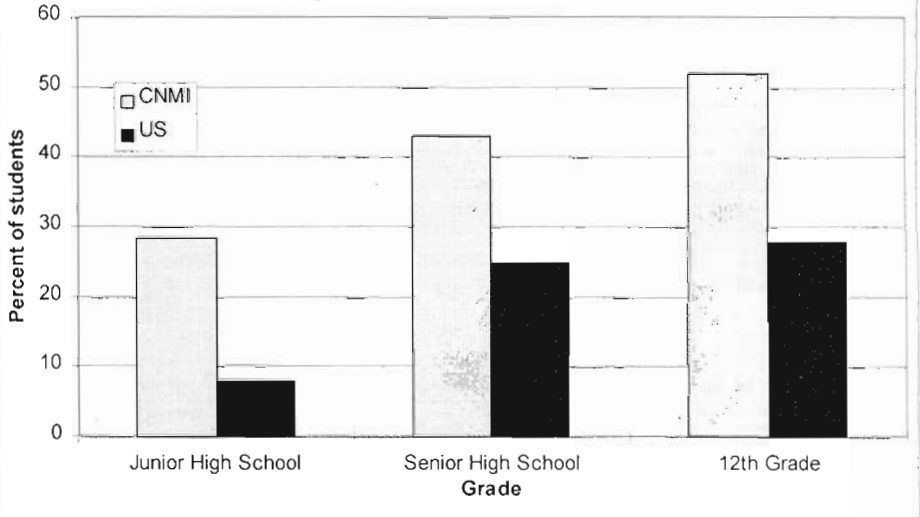
(M/TJHS), and 101 were from Rota High (RHS) grades 10, 11 and 12. The age range of students was 11 to 21 years with 43% less than 15 years. The ethnic proportion of respondents were 45% Chamorro, 20% Carolinian, 15% other Micronesian, 4% Filipino, 2% Stateside US, and 14% other and unspecified. There were 731 (75%) males and 178 (25%) females in the sample due to a high proportion of males enrolled in health classes at M/THS. Table 1 shows the total enrolments at school by age, sex and ethnicity.

Tobacco smoking

The prevalence of smoking was 32% for females and 39% for males with a median age of onset being 12 and 13 years, respectively. The youngest age of onset of any smokers was 6 years. By school, the prevalence of smoking was 41% for M/THS, 29% for M/TJHS and 46% for RHS. Table 2 shows the prevalence of current risk behaviour of students by groups. Table 3 shows the various risk behaviours by ethnic groups.

Comparative smoking data: A 1993 survey of RHS students in science classes showed that 43% were smokers and 12% used smokeless tobacco. Most of the students (73%) who used tobacco reported that they were able to purchase their tobacco directly from a store (in violation of the law against sale of tobacco to minors)[1].

Figure 1. Smoking. CNMI vs U.S.



Another 1993 survey of smokeless tobacco use at Hopwood Junior High School on Saipan found 34% of the student body using tobacco with betelnut and another 23% using betelnut alone. Statistics on tobacco chewing without betelnut are not available. Surprisingly, 28% of students in that sample said they were not aware that tobacco causes diseases[2].

Ten (30%) 12th grade students and 25% of 392 junior and senior high school students in a survey of public and private school students on Saipan and Rota in early 1994 reported regular use of tobacco[3]. Only 9% of Asian/Pacific Island high school seniors residing on the US mainland smoke[4]. In the US 25% of high school age children and 8% of junior high school age children smoke cigarettes (while 9% and 3% use smokeless tobacco)[5]. The median age of onset of smoking in the US is 14.5 years, while only 28% of US high school seniors are smokers[7].

Table 2. Prevalence of current student behaviours

Group characteristics	Prevalence (%) of current behaviour status			
	Sexual practice	Tobacco smoking	Alcohol consumption	Illicit drug use
All students	38	38	35	34
Students in Junior High School	29	29	27	26
Students in Senior High School	53	43	42	42
By the time students reach 12th Grade	57	52	51	49
Median age for all students (yrs)	-	13	14	14

Table 3. Prevalence and median age of onset of current student behaviours by ethnic groups

Ethnic group	Prevalence (%) of current behaviours and median age (in years)							
	Sexual practice		Tobacco smoking		Alcohol consumption		Illicit drug use	
	%	Median age	%	Median age	%	Median age	%	Median age
Chamorro	50	–	42	13	34	13	37	13
Carolinian	34	–	27	12	33	13	41	14
Other Micronesian	50	–	24	11	47	14	45	15
Others	18	–	21	14	32	14	11	13

Table 4. Prevalence (%) and frequency of alcohol consumption and illicit drug use by schools

Consumption characteristics	M/THS %	M/TJHS %	RHS %	All schools %
Current alcohol consumption	42	25	41	51
Drank more than 6 drinks per sitting	13	3	13	8
Drank more than 3 times per week	3	4	9	4
Current illicit drug use	43	24	27	49
Hard drug users	4	2	0	3

Alcohol consumption

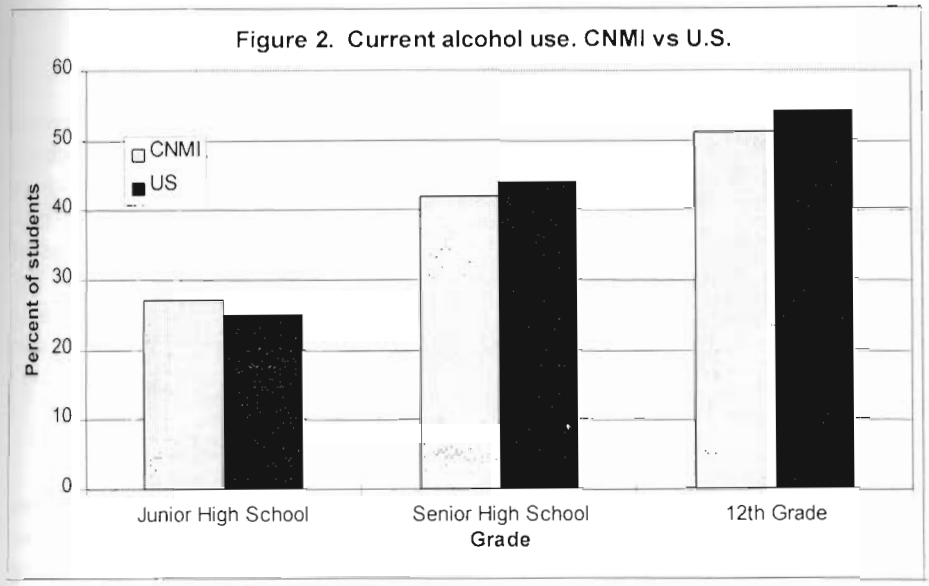
The prevalence of alcohol consumption was 27% among females and 36% males with a median age of 13 and 14 years, respectively. The youngest age of onset of alcohol use was 6 years. Table 3 shows the prevalence and frequency of alcohol consumption by school. Of those who drank alcohol, 25% take 6 or more drinks per session and 12% drank more than 3 sessions per week. Of students who drink more than 3 times per week, 47% also drank more than 6 drinks per session on average.

Comparative data on alcohol consumption: A 1993 survey of Rota High School students in science classes reported 40% as current drinkers. 48% of students who drank reported that they were able to purchase alcohol directly from stores (in violation of the law against sale of alcohol to minors)[1]. The Department of Public Safety reported 8% of its 579 arrests for driving under the influence of alcohol in 1993 were adolescents[8]. From another study eighteen (50%) high school seniors and 23% of 450 junior and senior high school students on Saipan and Rota reported drinking alcohol at least monthly.

In the US 25% of junior high school students, 44% of high school students and 54% of high school seniors drank alcohol, while 30% of all high school seniors report heavy drinking (6 or more drinks per session). The average age for onset of drinking in the US is 12.6 years[9].

Illicit drug use

The prevalence of illicit drug use was 23% females and 36% males with a median age of 13 and 14 years, respectively. The youngest age onset of drug use was 7 years.



Of students who are heavy drinkers, 30% also use illicit drugs more than 3 times per week. 96% of those who use illicit drug use marijuana and 7.5% have tried "ice" (3% of all students report having tried "ice"). Two students each reported using cocaine and heroin; one student reported using hallucinogens (either PCP or LSD). About 21% of the students who use drugs do so 3 or more times per week, on average.

Comparative data on illicit drug use: A 1993 survey of junior and senior high school students at Saipan Community School, Hopwood Jr. H.S. and Mariana H.S. identified 9.6% of students as having used "ice"[10]. Twelve teens were treated for problems with "ice" use, 26 for marijuana, and 38 for alcohol at the Commonwealth Health Center Substance Treatment Programme in 1993[11].

About 36% of 33 12th grade students and 24% of 394 junior and senior high school students in a survey of public and private school students on Saipan and Rota in early 1994 reported at least monthly use of marijuana. For regular "ice" use these figures are 6% and 3%, respectively. 12% of 12th grade students and 7% of junior and senior high students reported having tried "ice" at least once. In this same survey 6% of students reported that at least one member of their household was using "ice", while 27% and 65% reported marijuana and alcohol use by someone in their homes, respectively[3].

In the USA 29.5% of junior and senior high school-age students report having used illicit drugs at same time in the past while 13.9% report use within the past 30 days[4].

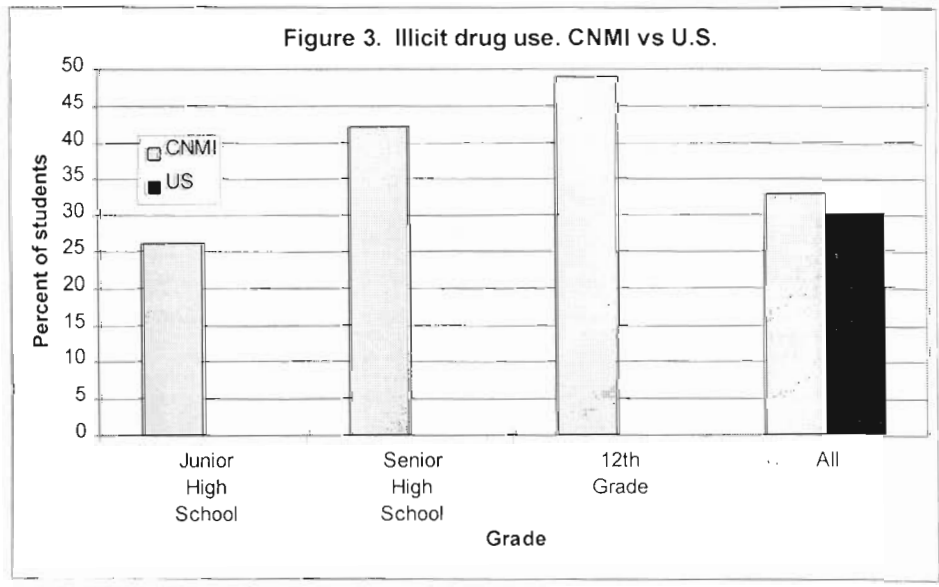
Knowledge of HIV/AIDS

Of all the students, 91% have heard of HIV and 98% have heard of AIDS. 72% of students requested that more HIV/STD education be given in the schools (57% junior students and 84% of senior students). Table 5 shows the status of the students knowledge of HIV and AIDS. There is a very high rate of misconception about what HIV is (29%) and how it spreads (79%).

Sexual practice

The prevalence of current sexual practice is 26% females and 39% males. Table 4 shows 21% have sex more than several times a year. Of all students, 16% have had sex with more than one partner. Of those who are sexually active, 20% use any form of contraception of which 77% use condoms, 0.6% use the pill, 0.7% use the withdrawal method, and 0.7% other methods. Of those who use contraception, 44% do so always, 28% often, and 28% occasionally. Of the students less than 17 years, 9% have had sex and 4% do so more than several times per year. Only one of these students reported using contraception regularly.

Comparative data on sexual practice: There were 195 births to teen mothers in 1993. Teen births currently make up 13% of all deliveries in the CNMI for a rate of 113 births per 1000 females age 15 to 19 years. This rate has not changed appreciably since 1987 (when computerised vital statistics first became available)[12]. A review of birth records on Rota



since 1957 revealed that average age at first pregnancy for indigenous mothers (20 to 21 years) has not change appreciably over the past 36 years[13].

Teen births occur in the US at 62 per 1000 females age 15 to 19 years; the rate of known teen pregnancy is 117 per 1000[14]. In the US 54% of high school age teens[15] and 71% of 18 years olds[16] have had sex at least once; 13% have had 4 or more sexual partners, and of those who are currently sexually active 77% reported using contraception during their last intercourse[17].

Multiple risk practices

Compared with non-smokers, smokers in this sample are 2.1 times as likely to have had sex, 3.3 times as likely to drink alcohol, and 3.2 times as likely to use drugs. Compared with those who do not use drug, those who do are 2.8 times as likely to have had sex. Compared with those who do not drink alcohol, those who do are 2.3 times as likely to have had sex. Compared with those who do not drink alcohol, those who do are 4.2 rimes as likely to use drugs. Of students who are heavy drinkers, 30% also use illicit drugs more than 3 times per week.

Table 5. Prevalence (%) of knowledge of HIV/AIDS and sexual practice categories by school

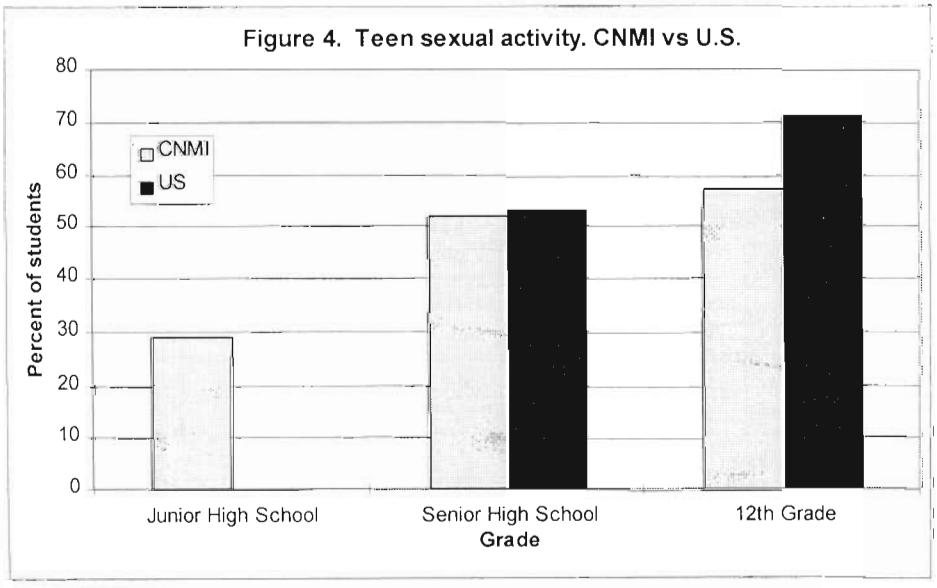
Knowledge and sexual practice category	M/THS %	M/TJHS %	RHS %	All schools %
Have heard of HIV	94	87	96	91
Have heard of AIDS	97	97	98	98
Have misconceptions about the spread of HIV	79	78	87	79
Do not know what HIV is	35	27	15	29
Believe that students are not susceptible	8	3	5	5
Have had sex at least once	21	48	67	38
Have sex more than several times a year	9	29	29	21

Risk practices by ethnic groups

Table 3, 6, 7 shows the prevalence of current status of students' behaviours and the median age of onset. The prevalence are high with very young median age of onset for all risk behaviours. The proportion of risk behaviour being highest among Chamorro and Micronesians.

Discussions

Substantial numbers of children in the CNMI are at risk for behaviour-related illnesses. Extrapolating the results of the survey in this sample to all schools in CNMI, the following are estimated numbers of students risk practices: 1083 smokers; 998 students drinking alcohol (including 120 frequent and 249 heavy drinkers -and 56 students who drink both heavily and frequently); 969 students using illicit drugs (including 85 students using hard drugs other than marijuana); 1083 students who have had sex at least once; 456 students who have had sex with more than one partner and 599 who have sex more than several times per year; 546 students who have frequent sex but don't use regular protection against pregnancy or STD; and 100 students of 16 years or less who have frequent sex without protection. In this sample, boys reported higher proportions of risk in all categories than girls, though the age of onset of high risk behaviour was less in girls who reported engaging in these behaviours.



Risk behaviours in CNMI began at a young age and tend to cluster in the same individual. Therefore interventions in CNMI should be targeted to children of junior high school age and below. An approach to prevention which focuses on developing self-esteem and skills for resisting peer pressure in general may be more efficient than a variety of programmes designed to control individual risks. On the other hand, large numbers of students still lacked basic knowledge about specific health risks (e.g. 79% of all students having misconception about the mode of spread of HIV and 28% of Hopwood students being unaware that tobacco causes disease).

Table 6. Risk behaviour by sex, ethnicity and age

Ethnicity and Age Group (Years)	Smoking		Alcohol		Drugs		Sexuality	
	Males	Females	Males	Females	Males	Females	Males	Females
Chamorro								
10 to 14	40	17	43	11	50	8	38	16
15 to 19	91	23	76	21	89	21	107	29
20 to 24	2	0	2	0	1	0	0	1
Carolinian								
10 to 14	16	5	21	4	27	4	16	7
15 to 19	28	6	34	8	42	8	29	0
20 to 24	0	0	0	0	0	0	0	0
Other Micronesians								
10 to 14	5	22	12	6	18	2	16	1
15 to 19	21	6	34	6	37	9	32	2
20 to 24	0	0	0	0	0	0	0	0
All Other								
10 to 14	1	3	3	5	7	1	6	1
15 to 19	3	3	21	8	10	4	11	0
20 to 24	39	0	1	0	0	0	1	0

There was no data available to compare these findings with other Pacific islands. Relative to the USA, the student population in CNMI showed comparable rates of sexual activity, but a much lower rate of use of protection against pregnancy and STD. The higher birth rate among teens in CNMI supports this notion. Rates of drinking and illicit drug use are about equal, though in the CNMI drinking generally begins at a younger age (12.6 compared to 14 years in the USA). Most striking is the difference between the USA and CNMI in the prevalence of smoking. The age of onset of smoking is 2 years earlier in CNMI. The prevalence of smoking among high school and junior high school children is two and three times higher in the CNMI, respectively.

Table 7. Proportions (%) of risk practice category by ethnic group

Risk practice category	Chamorro % (Total = 438)	Carolinians % (Total = 195)	Micronesian % (Total = 146)	Others % (Total = 195)	All % (Total = 974)
Sexually active students	50	34	50	18	38
Had more than one partner among sexually active group	32	27	56	18	42
Never or seldom use contraception among sexually active group	86	89	83	84	85
Drug users and using hard drugs	10	11	0	0	7

The students at Rota High School (RTS) appeared to be the most sexually experienced and were more likely to have had multiple sexual partners than the other schools. RTS students were less likely to use hard drugs but twice as likely to be frequent and heavy drinkers. Between ethnic groups, Chamorros and other Micronesians had higher rates of sexual activity than Carolinians, though all had equally low rates of use of contraceptives when they were active. Only Chamorro and Carolinians students reported use of

hard drugs. Other Micronesian students had the highest rates of alcohol use. Chamorros had the highest rates of smoking (though Micronesians had a lower average age of onset of smoking).

In recent years infectious diseases and undernutrition have become less common causes of suffering and death in CNMI while problems associated with tobacco, alcohol and illicit drugs as well as the risk of AIDS have increased. These latter problems are caused by behaviours which are already firmly established in children of school age. Strategies to prevent student drinking, tobacco smoking, illicit drug use, and premature unprotected sex hold promise for avoiding a huge amount of suffering and disease in the CNMI community.

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References

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"It is my hope that World AIDS Day with the theme *Sharing the Challenge* will provide another opportunity for us to work in mutual partnership and trust, and to confront together this lates threat to our well-being. For it is by building bridges rather than barriers and promoting dialogue rather than fear that AIDS can be truly vanquished."

World AIDS Day 1991