VIRGIN ISLANDS PREVENTION (VIP)
STATE INCENTIVE GRANT (SIG)

SUMMARY OF FINDINGS
FROM THE
2007 VIRGIN ISLANDS
YOUTH RISK BEHAVIOR SURVEY

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Pacific Institute
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YOUTH RISK BEHAVIOR SURVEY

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Introduction

In 2003 the Virgin Islands Territory received a US Center for Substance Abuse Prevention (CSAP) State Incentive Grant (SIG) program grant to develop and implement a comprehensive initiative to prevent substance abuse among youths ages 12 to 17. Activated in the spring of 2005, the VIP SIG is being administered by the Virgin Islands Department of Health, Division of Mental Health, Alcoholism, and Drug Dependency Services (DMHADDS, *the Division*), in cooperation with the Governor's Office and key Territory Departments and local agencies that are involved in substance abuse prevention. The primary tasks of the VIP SIG are to assess the prevention needs and resources of the Virgin Islands; to develop a strategic plan for prevention based on data from the needs assessment; to enhance the capacity of prevention stakeholders (including government agencies and local service providers) to implement evidence-based prevention strategies; and to evaluate those strategies. To assist with this project, the Division is contracting with the Chapel Hill Center of the Pacific Institute for Research and Evaluation (PIRE) to conduct the needs and resources assessments and the project evaluation. PIRE, in turn, is working with the University of the Virgin Islands (UVI) to assist with the needs and resources assessments and the evaluation.

One component of the SIG needs assessment was the Virgin Islands Youth Risk Behavior Survey (VI YRBS), a cross-sectional school-based survey designed to estimate the prevalence of risk behaviors as well as attitudes and assets associated with these behaviors among youths in grades 9-12 in the US Virgin Islands. This SIG-sponsored survey was first conducted in May of 2006 and again in May 2007. This report summarizes findings from the 2007 VI YRBS. As a current, primary data source, this survey fills an important gap in our knowledge about the prevalence of various risk and protective behaviors among Virgin Island youths. Risk behaviors can have adverse health effects and interfere with natural developmental and maturation processes during the critical period of adolescence, while protective personal, family, and social factors may lead to more positive decisions and/or buffer against these adverse effects. It is hoped that the information obtained from this and future surveys will help the Virgin Islands identify, track, and better understand important adolescent public health problems so that more effective programs and policies can be developed.

Methods

Survey Development

The 2007 VI YRBS was identical to the 2006 survey. The survey contained items that were drawn from the biennial Centers for Disease Control and Prevention (CDC) YRBS (Centers for Disease Control and Prevention, 2005) and from CSAP's Substance Abuse Risk and Protective Factor (SARPF) Student Survey, also known as the Communities That Care (CTC) Survey (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002; Glaser, Horn, Arthur, Hawkins, & Catalano, 2005). Although the CDC YRBS includes items assessing a variety of health behaviors (e.g., nutrition and exercise), we included only those items related to substance use because the VI YRBS survey is funded through the SPF SIG, which focuses on substance use

prevention. By including items drawn directly from the CDC YRBS, the current survey is comparable to past (and potentially future) administrations of the CDC survey.

The VI YRBS consisted of 112 items on demographic characteristics (8), personal safety (14), bullying (2), suicidal feelings (4), substance use (23), sexual behavior (7), attitudes/perceptions regarding substances (12), and risk and protective behaviors and attitudes (42). Substance use items asked about use of alcohol, tobacco, and other drugs (ATODs), including marijuana, cocaine, heroin, hallucinogens, methamphetamine, steroids, and injectable drugs. Questions were asked about dosage and frequency of use, such as current (past 30 day) use, lifetime use, early onset (before age 13) use, daily or heavy (more than 10 cigarettes per day) cigarette use, exposure to secondhand smoke, and binge (5 or more drinks on a single occasion) alcohol use.

Items drawn from the CTC Survey assessed factors related to substance abuse. Some of these factors appear to increase the risk of substance abuse (e.g., favorable attitudes toward substance use), some appear to provide protection against substance abuse (e.g., school bonding), and others simply increase our understanding of how adolescents navigate a world in which they may be exposed to substances (e.g., whom they would turn to discuss substance abuse and related problems). These factors were as follows:

Student attitudes favorable toward drug use. This scale consisted of three items assessing how wrong the student felt it would be for someone his or her age to smoke cigarettes, drink alcohol, or smoke marijuana. These items were measured on a scale from 1 (very wrong) to 4 (not wrong at all).

Community law enforcement favorable toward drug use. The scale consisted of three items asking whether a kid who smoked marijuana, drank alcohol, or carried a gun in the student's neighborhood would be caught by the police. These items were measured on a scale from 1 (strongly agree) to 4 (strongly disagree).

Perceived availability of drugs in the community. This consisted of three items assessing how easy it would be for the student to obtain cigarettes, alcohol, or marijuana in his/her community. These items were measured on a scale from 1 (very hard) to 4 (very easy).

Student antisocial behaviors. Student antisocial behaviors were measured with nine items that asked students how many times in past year they had been suspended from school, arrested, drunk or high at school, sold illegal drugs, stolen or tried to steal a motor vehicle, attacked someone with the idea of seriously hurting them, carried a handgun, and taken a handgun to school.

Peer substance use. The peer substance use was measured by asking the student how many of his or her four best friends had smoked, drank alcohol, used marijuana, or used other illegal substances, respectively, in the past year.

Parental attitudes favorable to drug use. This scale consisted of three items asking the student how wrong his or her parents feel it would be for him or her to smoke cigarettes, drink alcohol, or smoke marijuana. Items were measured on a scale from 1 (very wrong) to 4 (not wrong at all).

Family history of substance use. This single item asked whether anyone in the student's family had ever had a severe alcohol or drug problem (yes or no).

Other adult drug use/antisocial behavior. These three items asked how many adults (over age 21) the student has known personally in the past year who had used marijuana or other illegal drugs, sold or dealt drugs, or done other things that could get them into trouble with the police, such as stealing, selling stolen goods, or mugging or assaulting others.

Perceived risk of drug use. The perceived risk of drug use scale included three items asking the student how much he or she thinks people risk harming themselves (physically or in other ways) if they smoke one or more packs of cigarettes a day, drink one or two alcoholic beverages nearly every day, or smoke marijuana regularly. These items were scaled 1 (no risk) to 4 (great risk).

Prosocial involvement. The prosocial involvement scale included two questions that assessed the number of hours in an average week students spent in extracurricular clubs or organizations (other than sports) and in community volunteer work.

Effective family management. This scale consisted of eight items assessing the student's perspective on whether there were clear family rules and parental monitoring and involvement. These items were measured on a scale from 1 (strongly disagree) to 4 (strongly agree).

School bonding. The school bonding scale consisted of six items measuring commitment to school (school assignments are meaningful, what is being learned in school will be important later on, courses are interesting and school enjoyable, and the student is committed to doing his/her best work). These items were scaled on a 1 (never) to 5 (almost always). Additional individual survey items assessed truancy and average grades.

Religiosity. This single item asked how often the student attends religious services or activities. Response options ranged from 1 (never) to 4 (about once a week or more).

Attachments with others. These four items assessed whom the student would turn to if he or she had a problem with tobacco, alcohol or other drugs; whether he or she had spoken with parents or other adults about AIDS or HIV; whether there is an adult in his or her life to turn to for advice; and the frequency with which parents talk with him or her about what he or she is doing in school.

The Virgin Islands SIG Prevention Advisory Council (PAC) and onsite evaluators reviewed the instrument for cultural appropriateness and made minor changes to item wording where necessary. A copy of the survey is available upon request.

Survey Administration and Parent Notification

The VI YRBS was jointly administered by DMHADDS and the Virgin Islands Department of Education in May, 2007. These two agencies, in collaboration with PIRE and UVI, developed the logistics plans for administering the survey. The survey was administered in all classes to students in all public high schools (St. Croix Central High School, St. Croix Educational Complex, Charlotte Amalie High School, and Ivanna Eudora Kent High School) and to students in grades 9-12 in four of the largest private/parochial schools on St. Croix (Seventh Day Adventist, Country Day School, Good Hope School, and St. Joseph Catholic High School).[1]

The survey and the survey administration process underwent initial review by the PIRE Institutional Review Board (IRB) in March, 2007. The Division mailed notification letters to the parents of each high school student, informing them of the nature of this voluntary survey and giving them the chance to have their child opt out. The schools sent the same letter home with each student. In addition, the Division placed ads in local newspapers informing parents of the survey and instructing them on how to decline their children's participation, if they wished. Each school district determined which period/class to administer the survey, with the goal of reaching all students in a given school in a single day. On the day of the survey, student assent was obtained directly from the student. The Division mailed completed surveys to PIRE, where they were scanned into a software program for cleaning and analysis.

Data Analysis

The sample subset for analysis included all surveys with valid age, race, and gender data. Analyses were performed separately on the public and private high school students in order to provide more accurate comparisons to CDC normative data for the US mainland population and previous administrations of the YRBS in the Virgin Islands (the CDC survey is only conducted in public high schools). We dichotomized most of the survey questions, including all of the CDC-derived questions, to yes/no responses (i.e., behavior present/absent) and reported the proportion responding "yes." As discussed below, we weighted these proportions to allow generalization of results to the Virgin Islands public high school population. For risk and protective factors, we reported either mean scale scores or the percentages of students reporting said factors, depending on the nature of the items. Where possible we plotted trend lines to compare VI and US mainland trends from 1993 to 2007[2] and performed subgroup analyses by gender, grade, and race. We performed all analyses in SAS Version 9.1.3.

Weighting the Data by Grade, Gender, and Race

Because we did not obtain data from all high school students, but we want to generalize the data to all students, we applied weights to our sample to make it better resemble the whole student population. Sample weights were applied at the individual student level to the public high school

[1] We are uncertain whether the 2006 and 2007 SIG-sponsored samples are directly comparable to CDC YRBS samples between 1993 and 2003 because we do not know how CDC sampled the student population. For the SIG-sponsored VI YRBS, we attempted to obtain data from all public high school students, and it is likely that a similar strategy was used for the CDC YRBS.

[2] Data from the 2006 VI YRBS were plotted as 2005 data on the trend graphs to make direct comparisons to the most recent available US data; the CDC YRBS survey is biennial and no data were available for 2006. US data for 2007 were not available at the time of this writing.

subset by first determining the proportions of students in the survey sample by each grade, race, and gender combination (grade x race x gender cross-products). Next, the actual proportions of students by grade, race, and gender in the public high school population were obtained from National Center for Education Statistics (NCES) data for the most recent school year (2005-2006). Finally, weights were derived for each possible combination of grade, race, and gender as simply the ratio of the actual population grade-race-gender cross-product to the sample grade-race-gender cross-product. All public school subsample analyses were then weighted by this weight variable. Weights were not used to analyze private/parochial student data.

A note should be made regarding racial categorization of the sample. Race was assessed with a single survey item: "How do you describe yourself? (Select one or more responses)." Possible responses were American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino/Latina, Native Hawaiian or Other Pacific Islander, and White. This item thus resulted in multiple race combinations, which proved problematic. Since the comparator proportions for weighting the data were derived from the NCES database, which uses five mutually exclusive race categories (American Indian/Alaskan, Asian, Black, Hispanic, and White), we had to apply a decision rule which would convert the multiple race categories from our survey data (approximately 5% of the public school student sample) to similar mutually exclusive race categories. If a student indicated a race/ethnicity of American Indian or Alaska Native; Asian; Native Hawaiian or Other Pacific Islander; any combinations of these three race/ethnicities, he/she was designated as Other race. If a student indicated he/she was one of these three race/ethnicities plus White or Black, he/she was designated as Other race. If a student indicated he/she was Hispanic or any combination of Hispanic and another race/ethnicity, he/she was counted as Hispanic. If a student indicated he/she was both White and Black, he/she was counted as Black. And if a student did not provide a response to the question, he/she was designated Black on the assumption that he/she would most likely be the majority race/ethnicity of Black.

Confidence Intervals

In survey research samples are drawn from a larger population of individuals because we are rarely able to survey all members of the population. Measurements of the sample characteristics are used to estimate the same characteristics in the population. Despite the best efforts of the researchers to capture large representative samples, sample data are never completely accurate reflections of the population. The precision of our estimate is based on a number of factors, including the measurement techniques, the size of the sample, and the proportion of the population that demonstrates the characteristic being measured. Thus, depending on these factors, some estimates of the population are more precise than others. We express this level of precision, or the confidence we have that our estimate is the true value in the population from which the sample was drawn, as a confidence interval (CI). Wider CIs indicate lesser precision, and narrower CIs indicate greater precision. The true population is likely to lie anywhere between the low and high confidence limits.[3] We calculated confidence intervals on the proportions using the Fleiss method (Fleiss, Levin, & Paik, 2003).

For all the substance use graphs in this report, we include CIs (the vertical lines at the tops of the bars bounded by the low and high limits) to show how precise our estimates are. One exception

[3] In fact, our analyses allow us to say that we are 95% sure that the true population value lies within the CIs.

is for data from the 2001 VI YRBS. Because the response rates were unacceptably low, CDC did not generate CIs. Thus, the 2001 data do not reflect the overall population—they simply reflect the sample from which they were drawn. Another exception is the private school data, since the private school sample was not large enough to extrapolate results to all Virgin Island private school students.

In addition to showing how precise sample estimates are, CIs can be used to determine whether there are differences between groups. If the CIs for two groups (e.g., males and females) are overlapping, it generally means that there is no difference between the groups—even if the estimate itself appears to be different. If, on the other hand, the CIs do not overlap, or only overlap slightly, it means that the two groups are likely to be different from one another. The reader will note that because CIs depend in part on sample size and on the number of persons reporting the particular characteristic being measured, when the characteristic is rare (e.g., very low rates of use) or in subgroups with fewer members (e.g., Hispanics), these CIs are very wide. Such data should be interpreted with caution because the estimates are clearly imprecise.

Data Presentation

We used the US population as a standard for comparison on indicators where possible. We also graphed US African American trend data for comparison purposes because African Americans make up 76% of the overall Virgin Islands population (Central Intelligence Agency, 2007) and 87% of the public high school population (National Center for Education Statistics, 2006). Survey data for white students were not provided in the graphs by race/ethnicity because the number of white students in the sample was too low to generate reliable population estimates. Substance use indicators were organized by type (i.e., most commonly-used substances, followed by less commonly-used substances), and within type by more common use patterns (e.g., past 30-day use) and then less common but more dangerous use patterns (heavy use, binge use, daily use). Where possible, indicators were graphed using the same scale ranges (0 to 50 percent, for example) to allow for easier comparisons across indicators. However, in cases where prevalence rates were very low or very high, scales had to be adjusted to a more appropriate range to visualize small group differences or to accommodate the full range of data.

Results

Sample Demographics

After excluding 19 duplicate surveys (data entry errors), there were 4,077 student surveys returned, of which 3,398 were from public school students. Assuming that all enrolled public high school students were available to take the survey (n = 4,997 according to the (National Center for Education Statistics, 2006), this number represented a public high school student response rate of 68%. There were 3,808 student surveys with valid, non-missing grade, sex, and race responses, 83% (n = 3,144) from students in the four public high schools and 17% (n = 664) from students in the four private/parochial high schools. These students constituted the analysis dataset. Demographic characteristics of the overall student sample and subsamples are summarized in Table 1.

Table 1. Demographic Characteristics of the 2007 VIYRBS High School Survey Sample

	Public Students in Analyses (n = 3,144)	Private Students in Analyses (n = 664)		All Students in Analyses (n = 3,808)	All Students Surveyed (n = 4,077)
Age, median years, (SD)	16.0 (1.24)	16.0 (1.22)		16.0 (1.24)	16.0 (1.25)
range	12 - 18	12 - 18		12 - 18	12 - 18
Sex, n (%) male	1,397 (44.4)	281 (42.3)		1,678 (44.1)	1,692 (44.2)
Grade, n (%)					
9th	1,018 (32.4)	166 (25.0)	***	1,184 (31.1)	1,188 (31.0)
10th	916 (29.1)	176 (26.5)		1,092 (28.7)	1,093 (28.5)
11th	666 (21.2)	171 (25.8)		837 (22.0)	848 (22.1)
12th	544 (17.3)	151 (22.7)		695 (18.2)	696 (18.1)
Race/ethnicity, n (%)					
African American	2,642 (84.0)	449 (67.6)	***	3,091 (81.2)	3,347 (82.1)
Hispanic	421 (13.4)	118 (17.8)		539 (14.2)	541 (13.3)
White	28 (0.9)	70 (10.5)		98 (2.6)	105 (2.6)
Other	53 (1.7)	27 (4.1)		80 (2.1)	84 (2.1)
Language					
English	2,871 (92.0)	604 (91.9)		3,475 (92.0)	3,500 (91.7)
Spanish	175 (5.6)	38 (5.8)		213 (5.6)	215 (5.6)
Patois	40 (1.3)	5 (0.8)		45 (1.2)	48 (1.3)
Arabic	15 (0.5)	6 (0.9)		21 (0.6)	27 (0.7)
Other	20 (0.6)	4 (0.6)		24 (0.6)	25 (0.7)
Mother's education level					
Completed grade school or less	122 (4.0)	13 (2.0)	***	135 (3.6)	136 (3.6)
Some high school	361 (11.7)	38 (5.8)		399 (10.6)	402 (10.6)
Completed high school	1,017 (32.9)	151 (23.1)		1,168 (31.2)	1,179 (31.2)
Some college	395 (12.8)	92 (14.1)		487 (13.0)	489 (12.9)
Completed college	572 (18.5)	198 (30.3)		770 (20.6)	775 (20.5)
Graduate or professional school	171 (5.5)	100 (15.3)		271 (7.2)	274 (7.2)
Not sure	453 (14.7)	62 (9.5)		515 (13.8)	526 (13.9)
Father's education Level					
Completed grade school or less	162 (5.3)	30 (4.6)		192 (5.2)	196 (5.2)
Some high school	390 (12.7)	62 (9.6)		452 (12.1)	459 (12.2)
Completed high school	923 (30.0)	154 (23.7)		1,077 (28.9)	1,083 (28.8)
Some college	170 (5.5)	72 (11.1)		242 (6.5)	244 (6.5)
Completed college	403 (13.1)	121 (18.6)		524 (14.1)	526 (14.0)
Graduate or professional school	135 (4.4)	88 (13.6)		223 (6.0)	226 (6.0)
Not sure	896 (29.1)	122 (18.8)		1,018 (27.3)	1,033 (27.4)
Sexual orientation					
Heterosexual	2,979 (96.0)	624 (94.6)		3,603 (95.8)	3,628 (95.6)
Bisexual	54 (1.7)	18 (2.7)		72 (1.9)	73 (1.9)
Gay or lesbian	20 (0.6)	5 (0.8)		25 (0.7)	29 (0.8)
Not sure	49 (1.6)	13 (2.0)		62 (1.6)	65 (1.7)

Significant difference between public and private/parochial schools: *p<.05; **p<.01; ***p<.001. Note: for non-dichotomous characteristics, significance test is the Cochran-Mantel-Haenszel Statistic (based on table scores) for a difference in the distributions of students across categories.

For students who were included in the analyses, the median age was 16 with a range of 12 to 18; 44% were males; 31% were 9th graders but only 18% were 12th graders; and 81% were African-American, 14% Hispanic, 3% White, and 2% classified as other race. The vast majority (92%) were English-speaking. Thirty one percent of mothers and 29% of fathers had completed a high school education, and 20% of mothers and 14% of fathers had completed college, although nearly twice the percentage of students (27%) reported being unsure of their father's educational status versus their mother's educational status (14%). Ninety-six percent of students reported a

heterosexual orientation. Compared to public school students, private/parochial school students were more likely to be upper classmen, non African-American, and have mothers with more education.

Looking at the public high school subset, 63% (n = 3,144) of the estimated 4,997 VI public high school students (NCES 2005-2006 estimated census) in the four targeted public high schools were included in the analysis. As indicated in Table 2, 2007 VIYRBS sample demographic characteristics were similar to those of two prior YRBS surveys in the Territory (2001 and 2003) and fairly representative of the 2005-2006 VI public high schools population. Nevertheless, weighting allowed for correction of some slight differences, such as the 2007 VI YRBS over-sampling of females, 10th graders, whites and other races, and under-sampling of 9th and 12th graders. Caution is warranted when directly comparing demographic characteristics to prior CDC YRBS surveys because it is unclear from the description of its methodology whether the CDC employs valid sex, race, and grade data as an inclusion criterion during its data cleaning and editing processes (Brener et al., 2004). We employed this criterion to the 2007 YRBS survey sample because valid sex, race and grade data were needed to apply weights.

Table 2. Sex, Grade, and Race Composition of Recent CDC YRBS Public High School Survey Samples, the 2007 YRBS Public High School Survey Sample, and the Public High School Student Population*

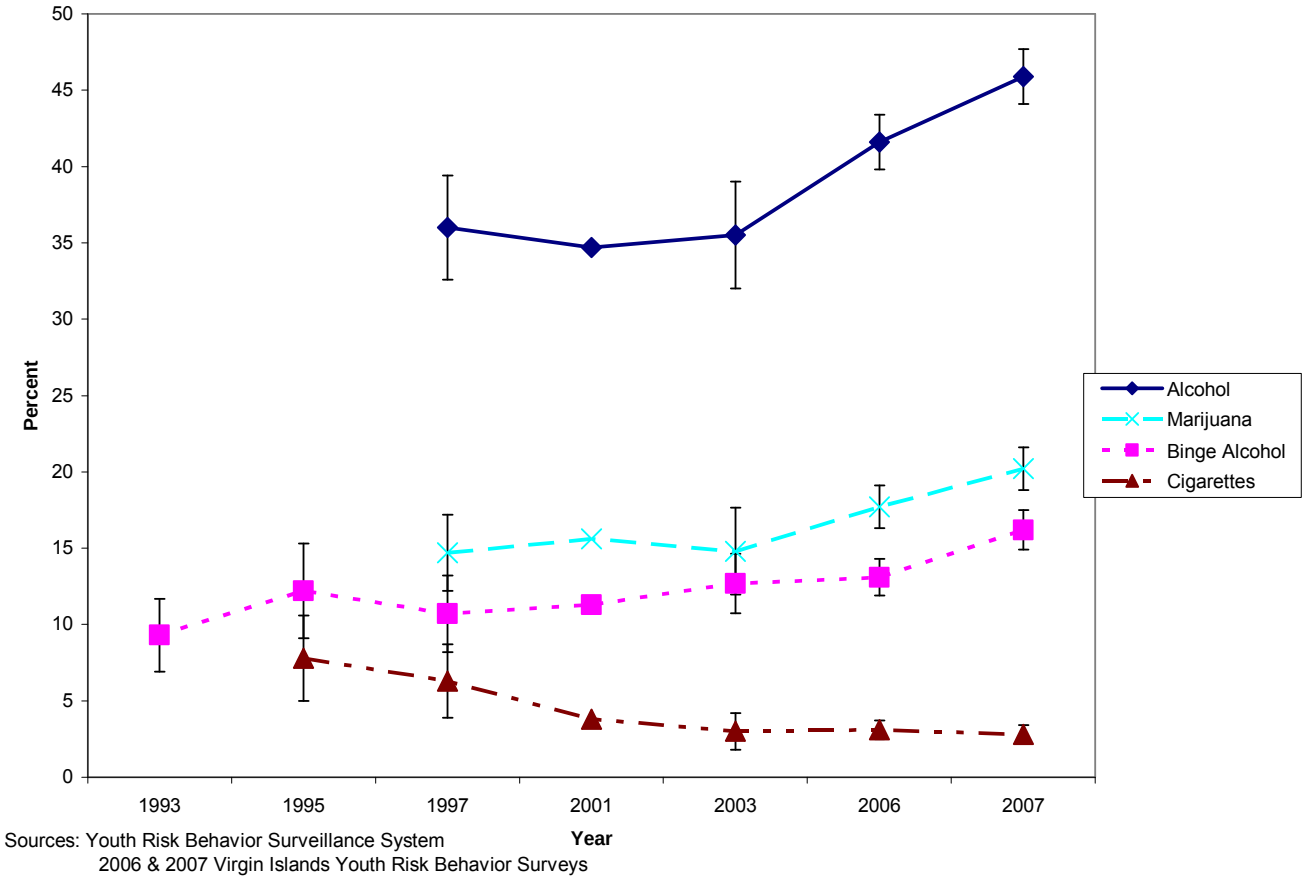
	Male	Female	9th	10th	11th	12th	African Amer.	Hisp.	White	Other races	Multiple races
YRBS 2001	43.3	56.7	26.7	30.3	24.0	19.0	81.4	14.5	0.5	1.8	1.7
YRBS 2003	43.3	56.1	33.7	29.3	20.6	15.8	79.4	16.5	0.4	1.9	1.0
YRBS 2006**	42.0	58.1	34.6	24.7	24.0	16.7	83.5	14.5	0.6	1.3	NA
YRBS 2007**	44.4	55.6	32.4	29.1	21.2	17.3	84.0	13.4	0.9	1.7	NA
VI Public HS***	47.0	53.0	37.7	22.3	20.0	20.0	87.0	11.8	0.6	0.5	NA

*Numbers are percentages.
**Subset of public high school students with valid sex, race and grade data
***From NCES 2005-2006

Substance Use Indicators, Public High School Students

Alcohol is the substance most commonly used by Virgin Island public high school students (45.9% in 2007), followed by marijuana (20.2% in 2007) (Figure 1). Since the last reporting period (2006), there appears to have been a significant rise in current alcohol use and binge alcohol use (defined as five or more drinks on a single occasion), and an increase in marijuana use, all of which are disconcerting trends. Smoking rates remained low and declined in 2007 to 2.8%.

Figure 1. Current (Past 30-Day) Substance Use among Youths in Grades 9-12, Virgin Islands, 1993-2007

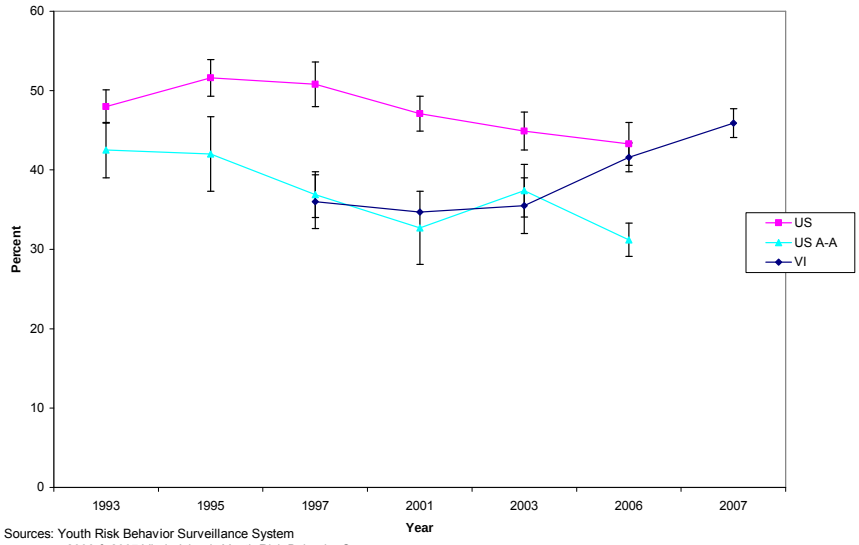


Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Alcohol

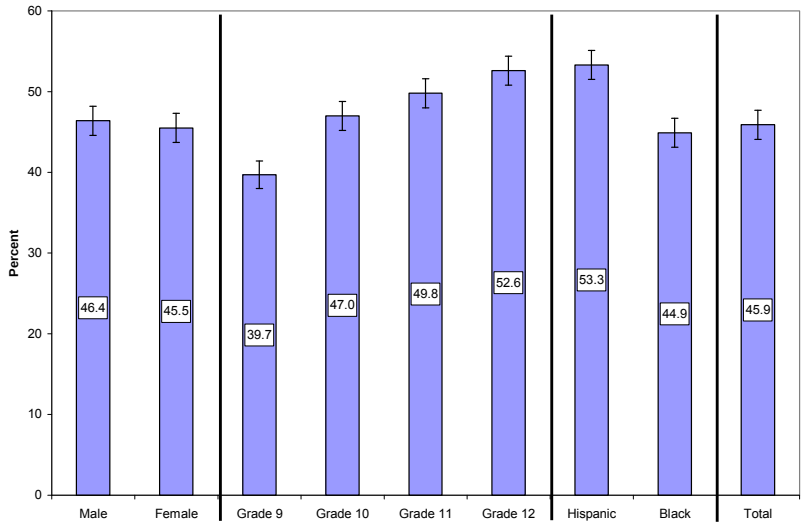
Figures 2 through 13 provide information about alcohol use among Virgin Islands public high school students. Current alcohol use among Virgin Islands public high school students rose from 35.5% in 2003 to 45.9% in 2007, including a sharp increase from 2006. Virgin Islands 2007 rates appear to have surpassed US mainland rates, as the latter have declined in recent years (Figure 2). Until 2003, alcohol use among US Blacks was on a similar track as Virgin Islanders, but US Blacks reported a substantial decrease in 2005. As shown in Figure 3, students reporting the highest rates of current use were 11th and 12th graders (49.8% and 52.6%, respectively) and Hispanic students (53.3%).

Figure 2. Current (Past 30-Day) Alcohol Use among Youths in Grades 9-12, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

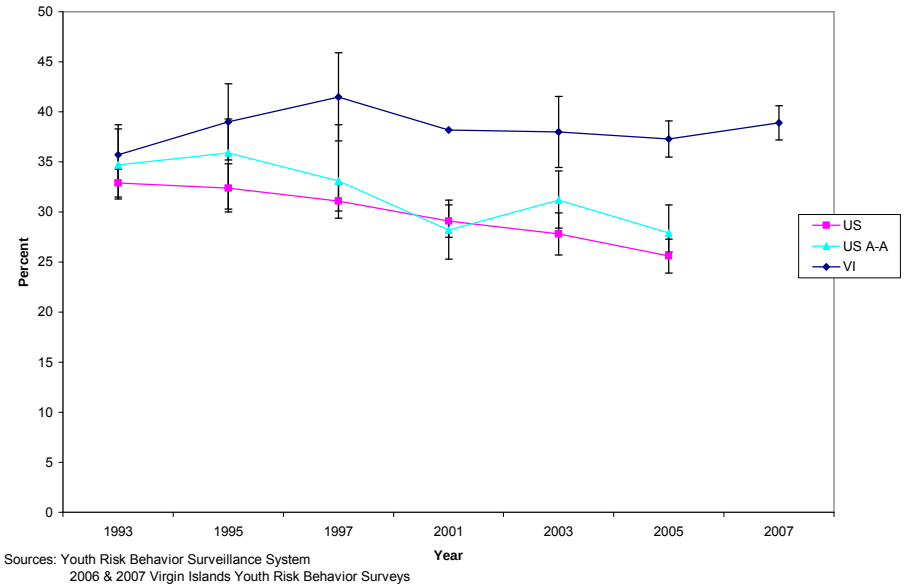
Figure 3. Current (Past 30-Day) Alcohol Use among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

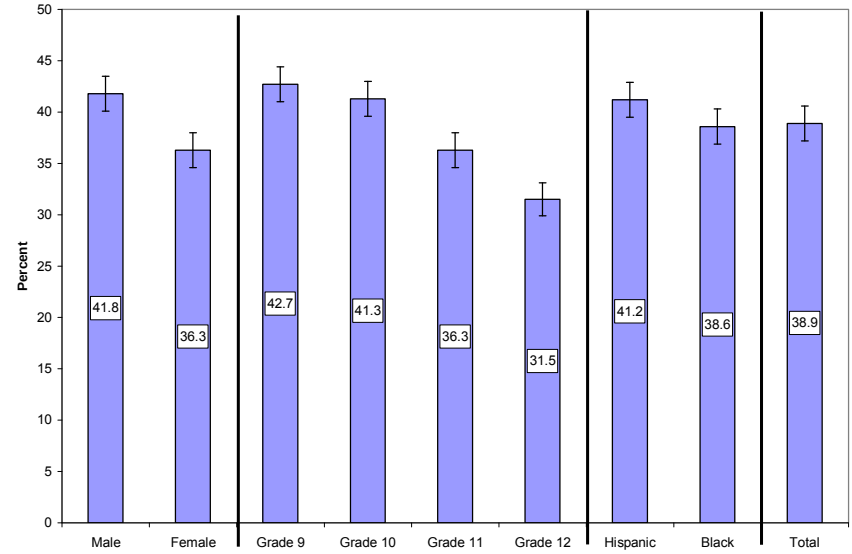
In 2007, 38.9% of Virgin Islands youth reported early use of alcohol, slightly higher than in 2006 (37.3%) and much higher than the 25.6% of US youth in 2005. Rates of early use among US youth overall and US African American youth have decreased since the early 1990's, while early use has increased in the Virgin Islands. As seen in Figure 5, males and 9th and 10th graders were most likely to report early use (41.8%, 42.7%, and 41.3%, respectively). Ninth and 10th graders may be more likely to report early alcohol use because of a recall bias—that is, their memories of first use may be better than students who are older.

Figure 4. First Alcohol Use Before Age 13 among Youths in Grades 9-12, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

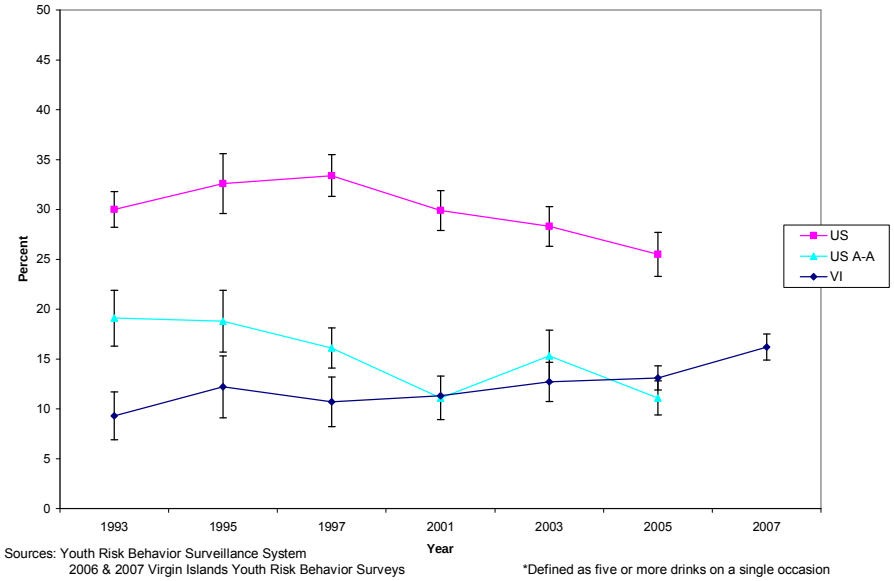
Figure 5. First Alcohol Use Before Age 13 among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

Binge alcohol use rates have remained much lower among Virgin Islands public high school students compared to US students, and have been similar to US African American rates in recent years (Figure 6). However, US binge drinking rates have been steadily declining since 1997 while Virgin Islands rates have been increasing and showed a significant rise since the last reporting period. In 2007, Virgin Island binge rates were 16.2%, compared 13.1% in 2006 and to a US rate of 25.5% in 2005. As shown in Figure 7, the rates were higher among males (19.0%), 12th graders (18.6%), and Hispanic students (26.5%).

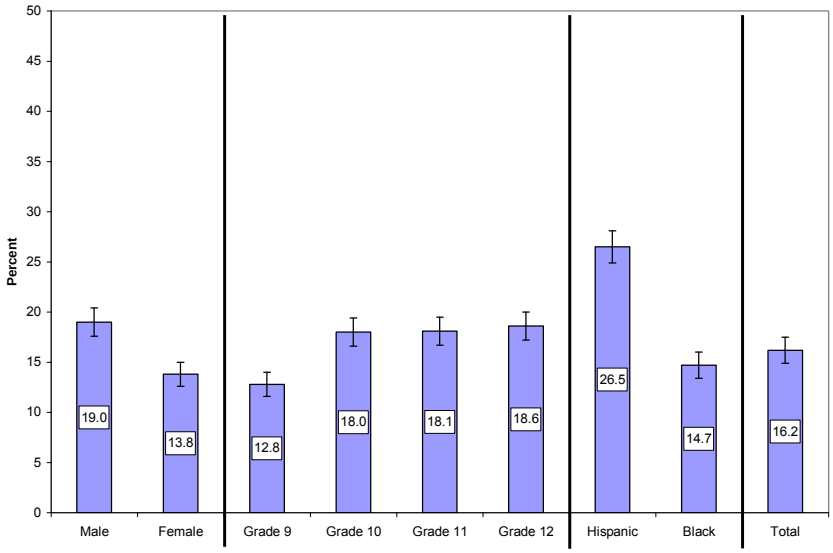
Figure 6. Binge Alcohol Use* among Youths in Grades 9-12, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

*Defined as five or more drinks on a single occasion

Figure 7. Binge Alcohol Use* among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

*Defined as five or more drinks on a single occasion

Rates of public high school student drinking and driving is declining in the US (overall and among African Americans) but increasing in the Virgin Islands, to the point where they appear to be exceeding US rates (Figure 8). In 2007, 10.3% of Virgin Islands youth reported drinking and driving, compared to 8.5% in 2006. As seen in Figure 9, rates of drinking and driving were clearly higher among males (13.4%) and 12th graders (16.1%).

Figure 8. Driving After Drinking among Youths in Grades 9-12, Virgin Islands and US, 1993-2007

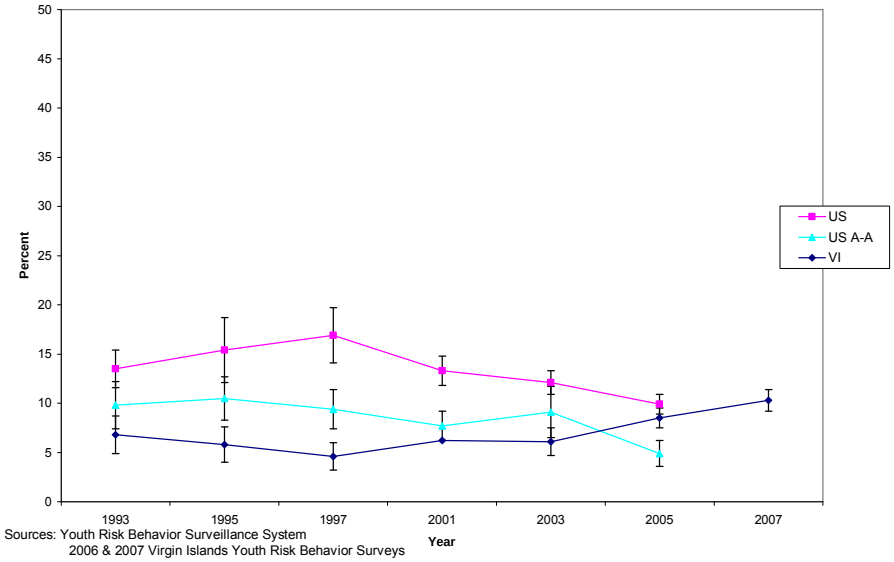
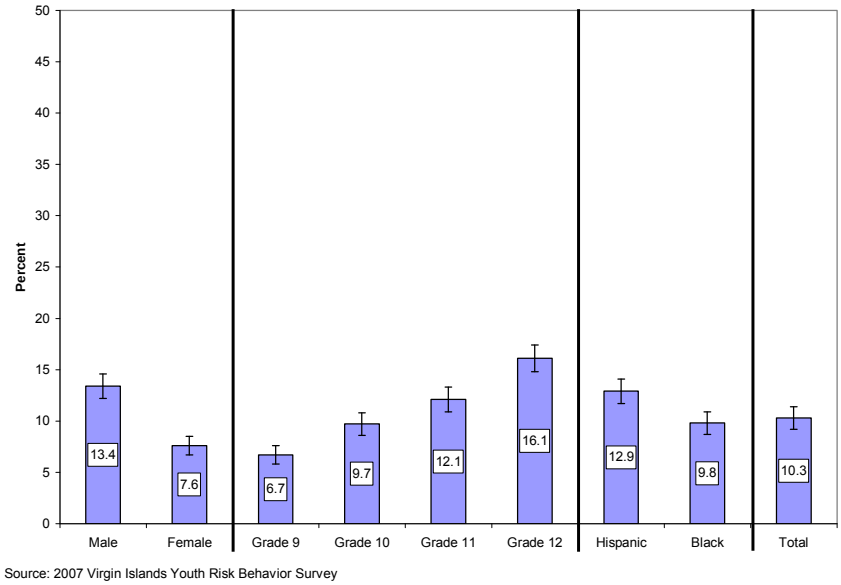
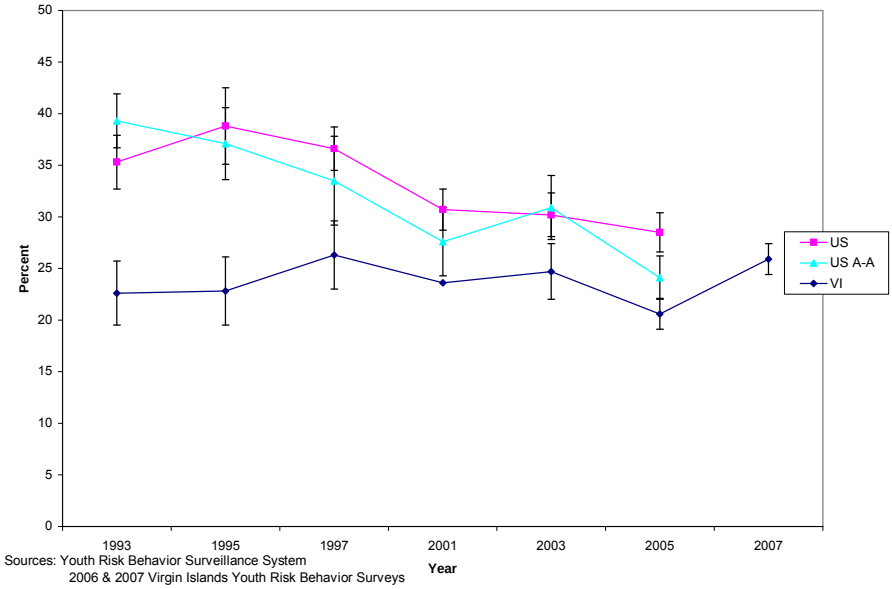


Figure 9. Driving After Drinking among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



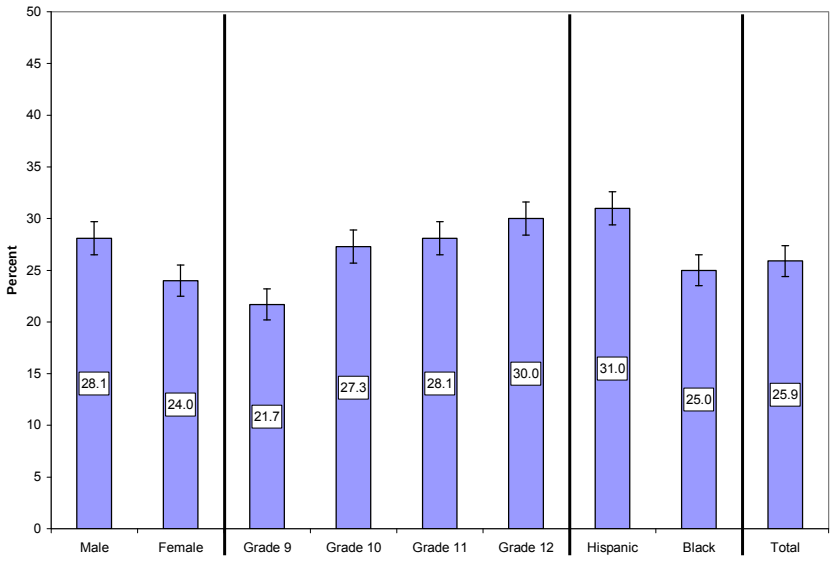
Rates of public high school students being a passenger in a car with a drinking driver were lower in the Virgin Islands than the US, but rose significantly since the last reporting period (Figure 10). In 2007, 25.9% of Virgin Islands youth rode in a car with a drinking driver, compared to 20.6% in 2006 and 28.5% of US youth in 2005. As shown in Figure 11, rates were higher among males (28.1%), 12th graders (30.0%), and Hispanics (31.0%).

Figure 10. Riding in a Car with a Drinking Driver among Youths in Grades 9-12, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

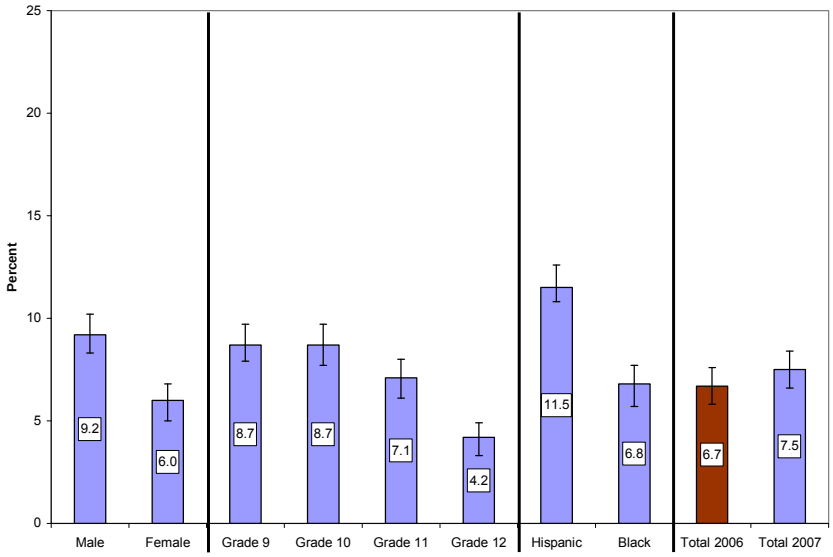
Figure 11. Riding in a Car with a Drinking Driver among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

Rates of current alcohol use on school property in 2007 were similar to 2006 (6.7% vs. 7.5%, respectively). Males (9.2%), 9th and 10th graders (both 8.7%), and Hispanics (11.5%) reported higher rates of this behavior (Figure 12).

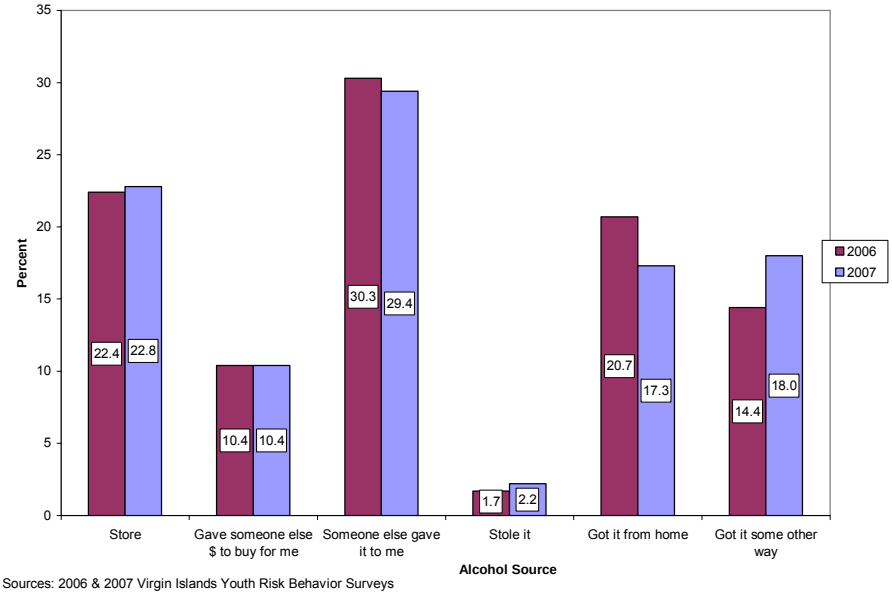
Figure 12. Current (Past 30-Day) Alcohol Use on School Property among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Finally, we asked students where they obtain alcohol. A lower percent of students obtained it from home in 2007 vs. 2006, and a higher percentage "got it some other way."

Figure 13. Sources for Obtaining Alcohol among Current Users, Youths in Grades 9-12, Virgin Islands, 2006 and 2007

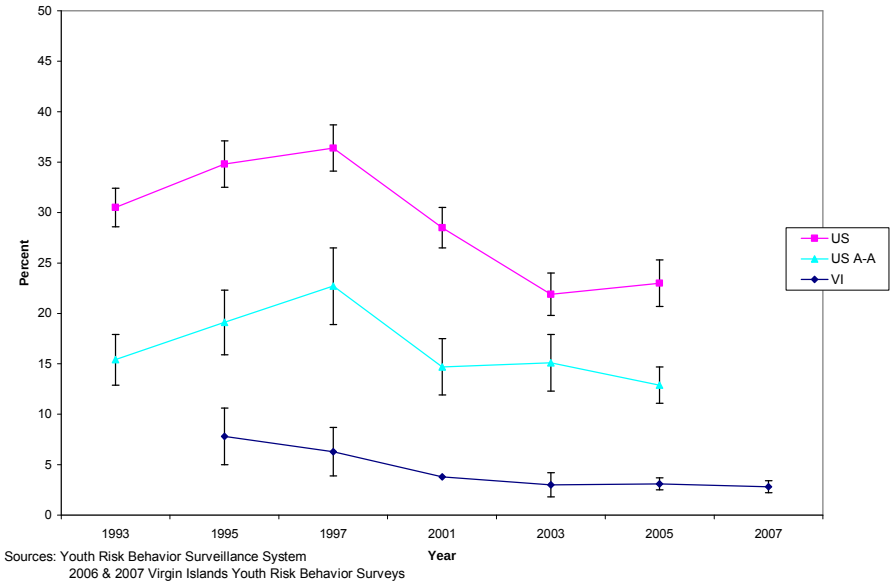


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Tobacco

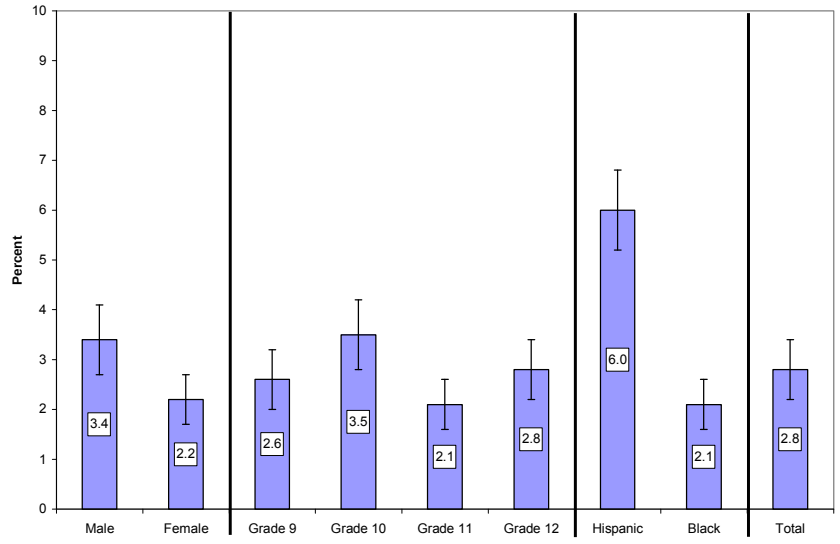
Figures 14 through 23 provide information about tobacco use among Virgin Islands public high school students. Figure 14 shows that current cigarette use among Virgin Islands public high school students has been much lower compared to that of US youth since at least 1995. In 2007, 2.8% of Virgin Islands youth used tobacco, compared to 23.0% of US youth in 2005. Use rates were higher among Hispanic students (6.0%), although rates among all subgroups were less than 10% (Figure 15).

Figure 14. Current (Past 30-Day) Cigarette Use among Youths in Grades 9-12, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

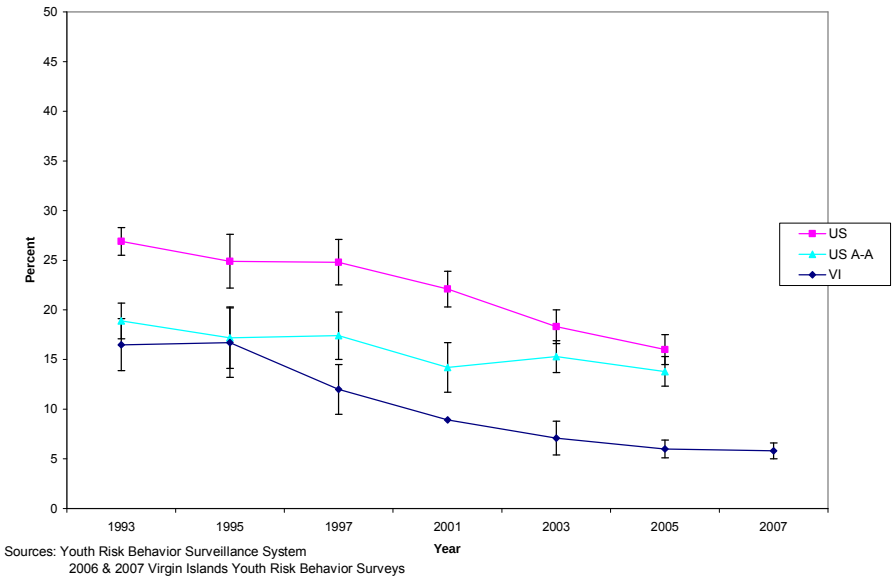
Figure 15. Current Cigarette Use among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

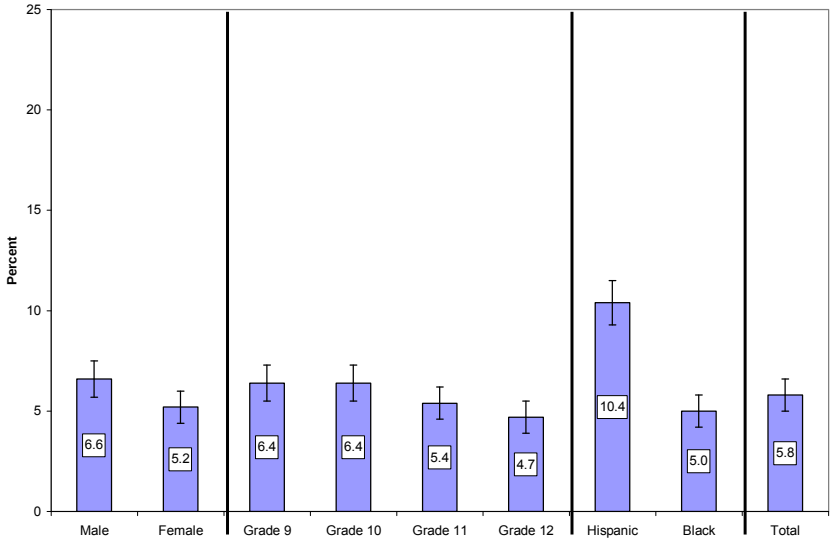
Virgin Islands public high school students reported lower rates of first using cigarettes before age 13, compared to US students overall and US African American students (Figure 16). In 2007, 5.8% of Virgin Islands youth reported early cigarette use, compared to 16.0% of US youth in 2005. Early use appears to be declining in both the VI and US. As shown in Figure 17, early cigarette use rates were highest among Hispanic students (10.4%).

Figure 16. First Cigarette Use Before Age 13 among Youths in Grades 9-12, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

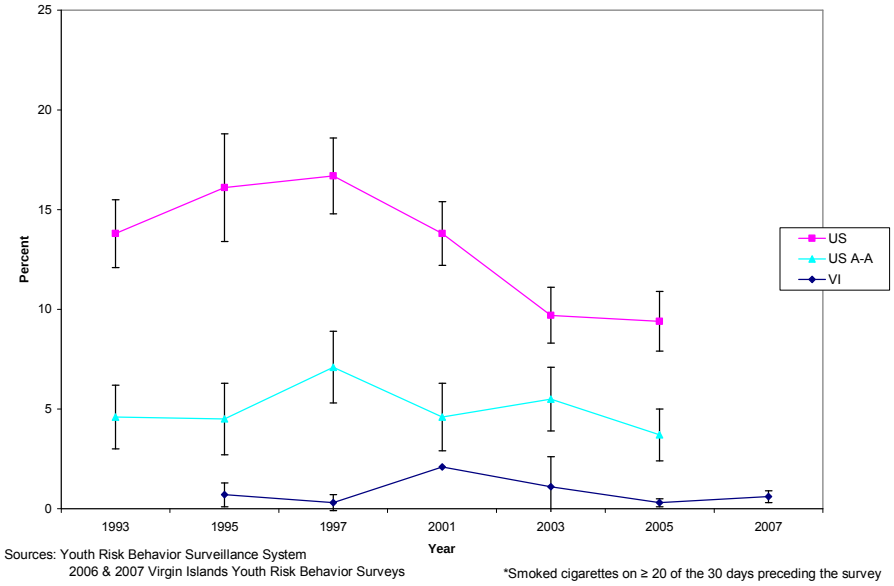
Figure 17. First Cigarette Use Before Age 13 among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

Daily cigarette use (smoked on ≥ 20 of the past 30 days), an indicator of nicotine addiction, was very rare among Virgin Islands public high school students, compared to US public high school students (Figure 18). Because there were extremely low rates (less than 1%) and wide, overlapping confidence bands for this indicator, no subgroups could be identified as having higher daily use rates (Figure 19).

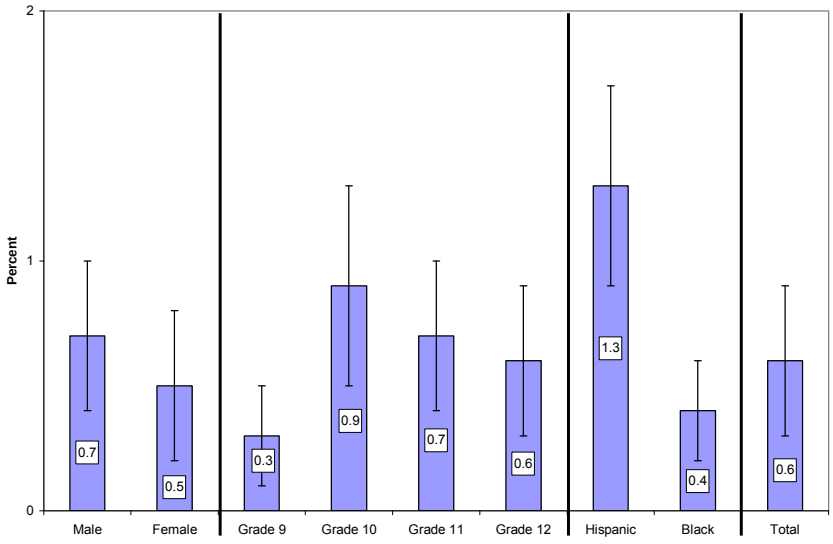
Figure 18. Daily Cigarette Use (on at least 20 days during the month) among Youths in Grades 9-12, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

*Smoked cigarettes on ≥ 20 of the 30 days preceding the survey

Figure 19. Daily Cigarette Use (on at least 20 days during the month) among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007

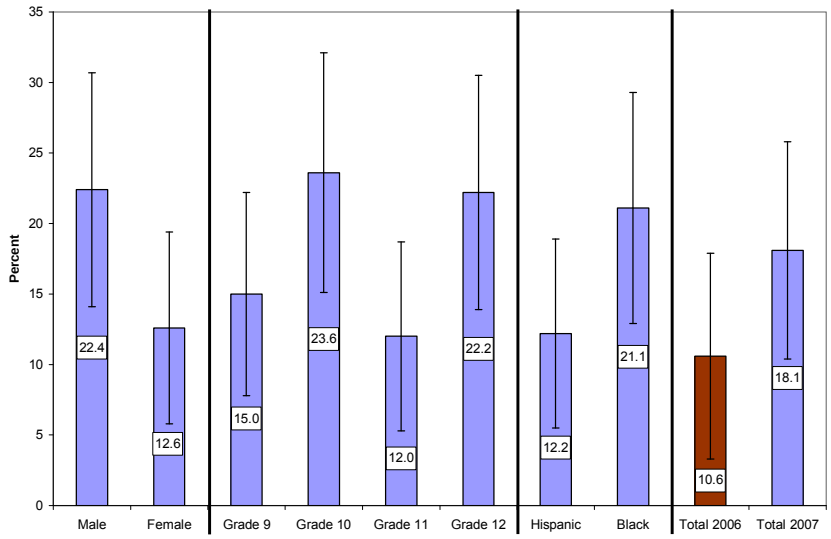


Source: 2007 Virgin Islands Youth Risk Behavior Survey

*Smoked cigarettes on ≥ 20 of the 30 days preceding the survey

Figure 20 shows that heavy cigarette use (more than 10 cigarettes per day) among current smokers nearly doubled from 2006 to 2007 (10.6% vs. 18.1%, respectively). Although the number of heavy users (n = 19) was small, this is a disconcerting trend. This rate was particularly high among males, 10th graders, and 12th graders, although the low numbers make the confidence intervals very wide.

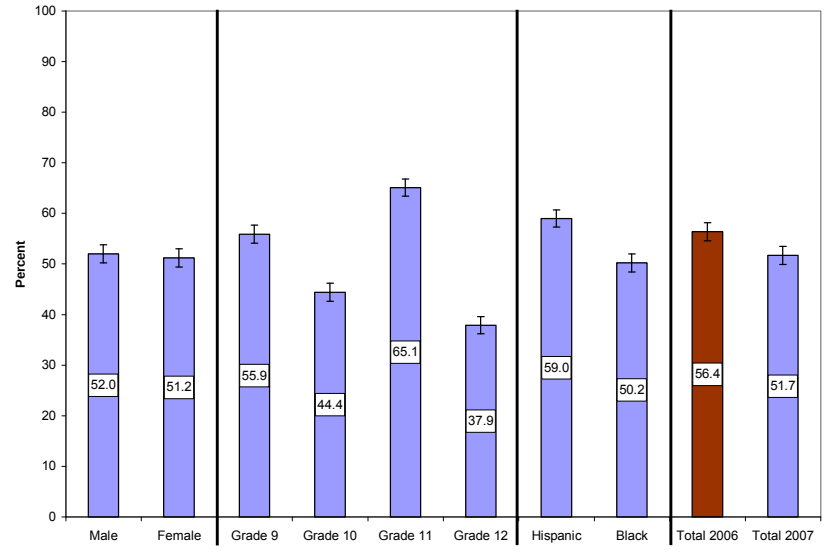
Figure 20. Heavy Cigarette Use (> 10 per day) among Youths in Grades 9-12 who are Current Users, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

On average, over half (52%) of adolescents who had smoked cigarettes during the past year reported stopping smoking for one or more days because they were trying to quit, similar to the rate in 2006. Over 60% of 11th graders reported doing so (Figure 21).

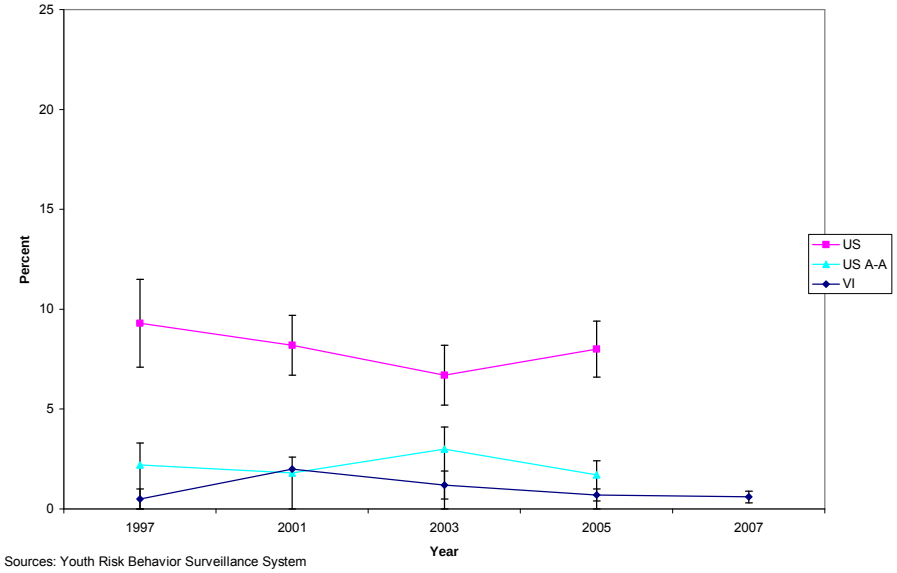
Figure 21. Youths in Grades 9-12 Who Smoked During the Past Year and Stopped Smoking for One or More Days Because They Were Trying to Quit, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

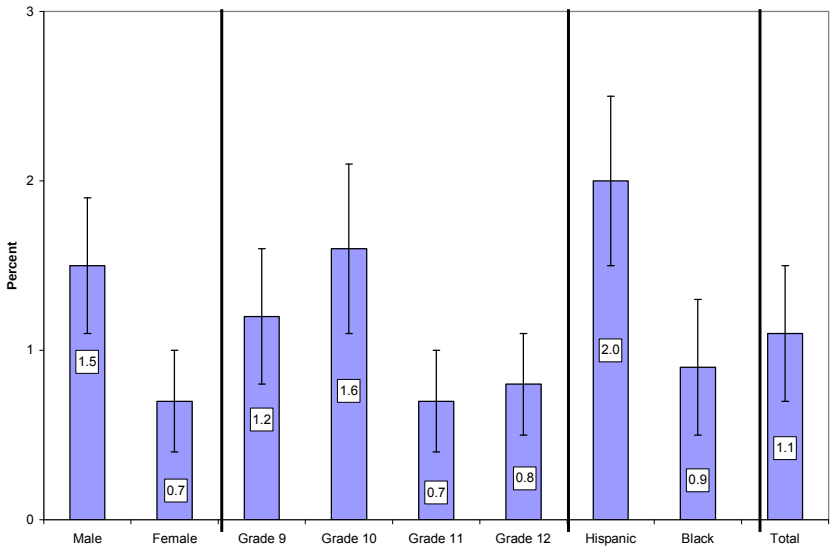
Figure 22 indicates that smokeless tobacco use rates were also much lower among Virgin Islands public high school students (0.6% in 2007) compared to US students (8.0% in 2005) but similar to US African American student rates (1.7%). Due to the extremely low use rates (1 to 2%) and very wide, overlapping confidence bands about the estimates, we were unable to determine which subgroups had higher use rates (Figure 23).

Figure 22. Current (Past 30-Day) Smokeless Tobacco Use among Youths in Grades 9-12, Virgin Islands and US, 1997-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 23. Current Smokeless Tobacco Use among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007

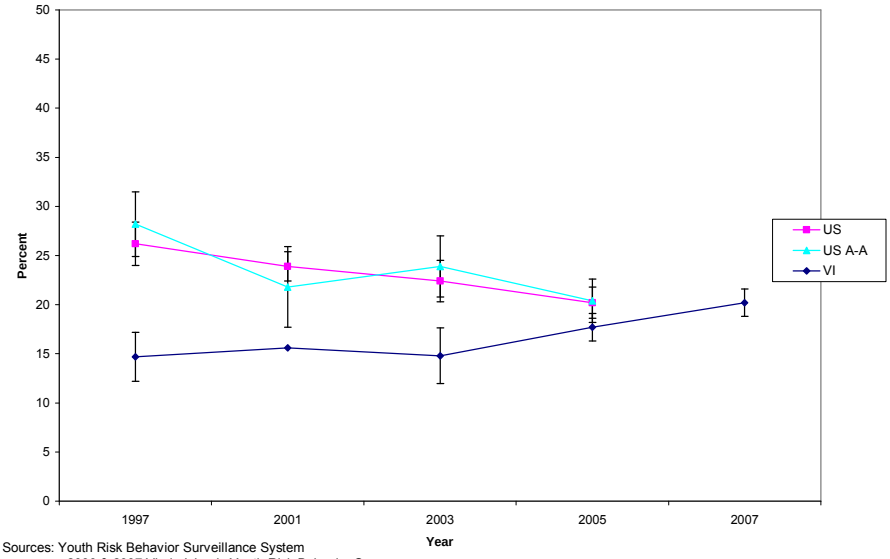


Source: 2007 Virgin Islands Youth Risk Behavior Survey

Marijuana and Other Illicit Drugs

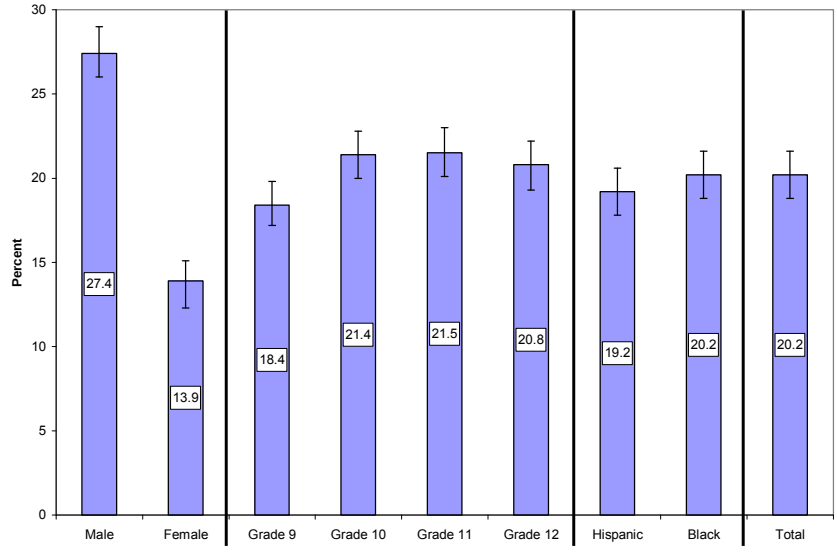
Figures 24 through 35 provide information about marijuana and other illicit drug use. Current (past 30-day) marijuana use rates among Virgin Islands students have increased since the mid 1990's, while US rates have steadily decreased. In 2007, 20.2% of Virgin Islands youth reported current marijuana use, up from 17.7% in 2006 (Figure 24). Figure 25 indicates that males were nearly twice as likely as females to report marijuana use (27.4% vs. 13.9%, respectively), and 10th through 12th graders reported slightly higher use rates (21.4%, 21.5%, and 20.8%) compared to 9th graders (18.4%).

Figure 24. Current (Past 30-Day) Marijuana Use among Youths in Grades 9-12, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 25. Current (Past 30-Day) Marijuana Use among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

Virgin Islands youth consistently reported higher rates of first marijuana use before age 13 compared to US youth (Figure 26). In 2007, 16.3% of Virgin Islands youth reported early marijuana use, up from 14.0% in 2006 and compared to 8.7% of US youth in 2005. Males reported early use more frequently than the other subgroups (23.5%); females (10.0%) and Hispanic students (11.5%) less frequently (Figure 27). There was a similar declining trend for reports of early use by grade level, again suggesting recall bias—that is, 9th graders could more easily recall early use of marijuana.

Figure 26. First Used Marijuana Before Age 13 among Youths in Grades 9-12, Virgin Islands and US, 1993-2007

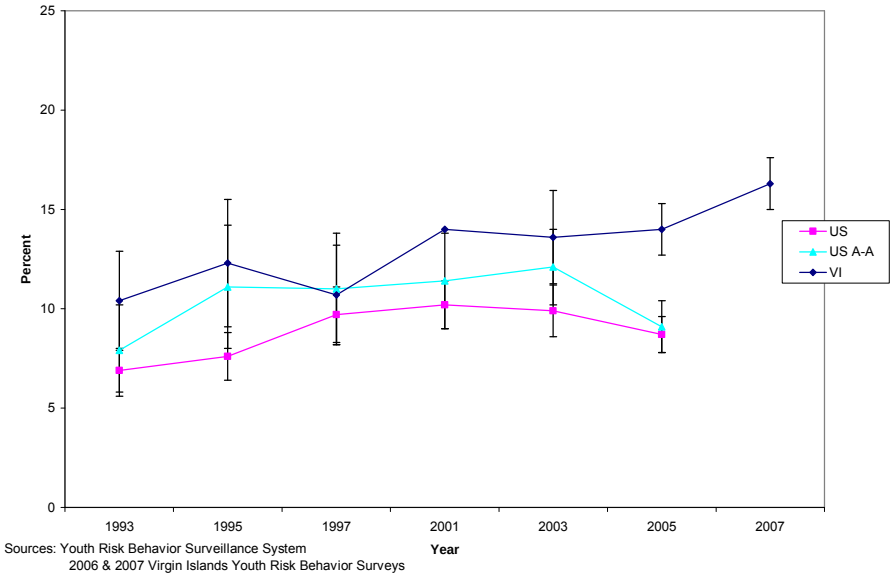
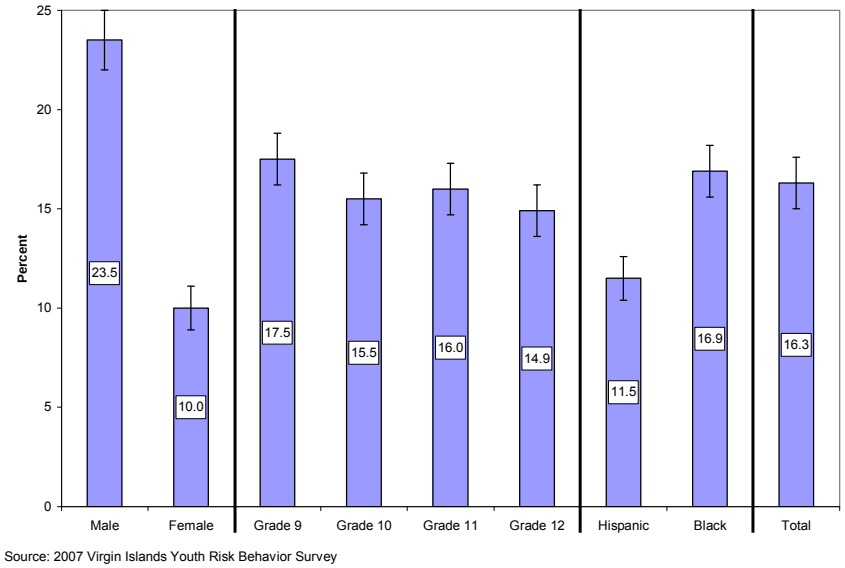
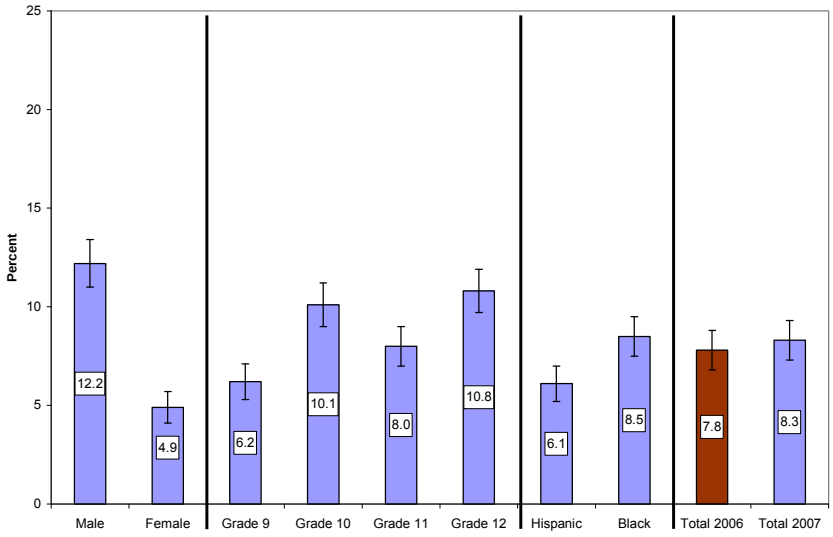


Figure 27. First Used Marijuana Before Age 13 among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



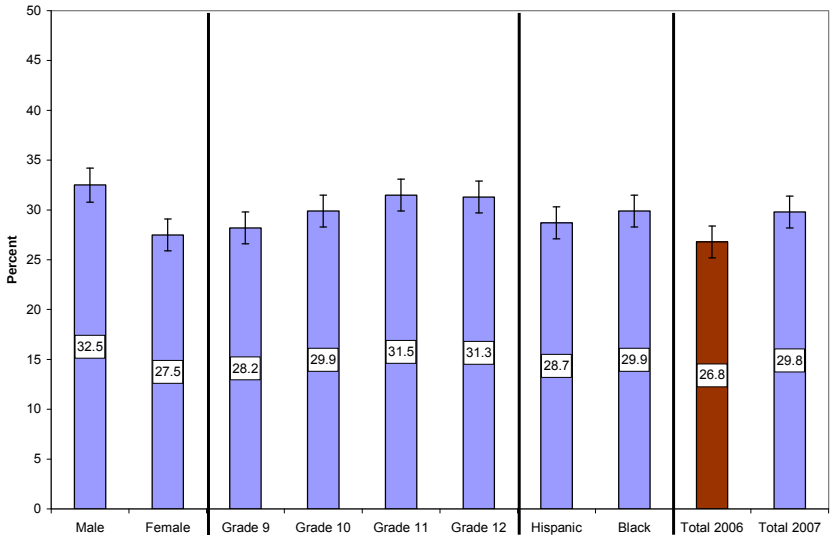
As seen in figure 28, rates of driving a car after smoking marijuana were similar in 2006 and 2007 (7.8% vs. 8.3%, respectively). In 2007, they were highest among males (12.2%). For riding in a car with someone who had smoked marijuana, the rate increased in 2007, from 26.8% to 29.8% (Figure 29). There were few subgroup differences. Males reported slightly higher rates than females (32.5% vs. 27.5%, respectively).

Figure 28. Youths in Grades 9-12 Who Drove a Car after Smoking Marijuana, by Gender, Grade, and Race, Virgin Islands, 2007



Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

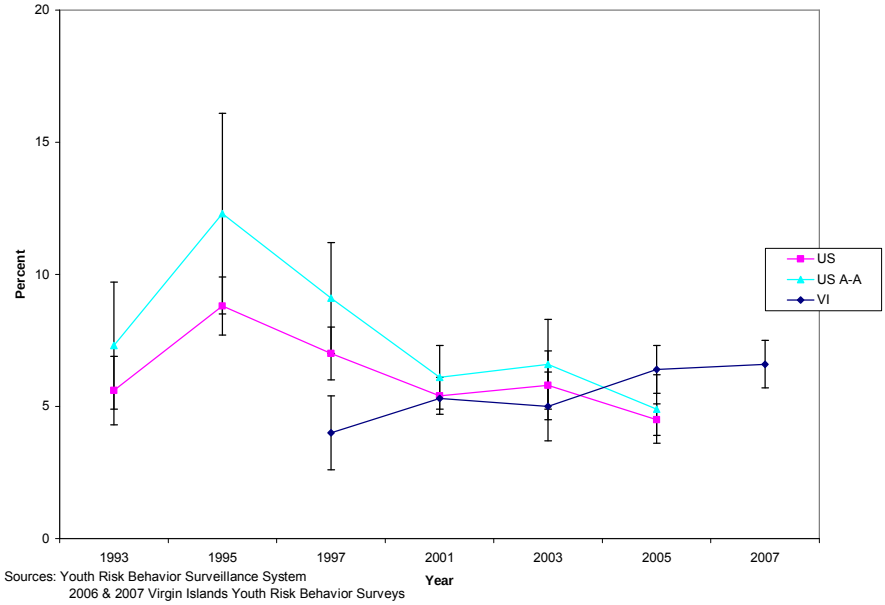
Figure 29. Youths in Grades 9-12 Who Rode in a Car with Someone Who Had Smoked Marijuana, by Gender, Grade, and Race, Virgin Islands, 2007



Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

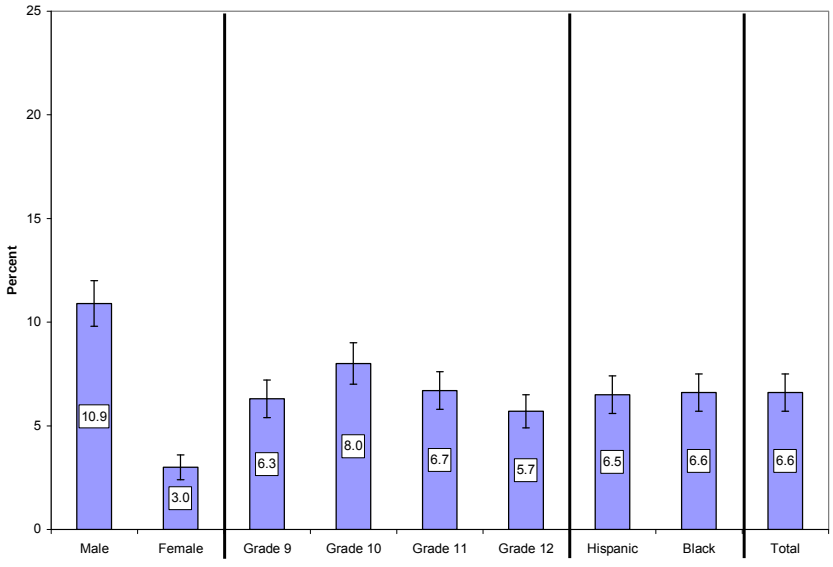
While relatively few students reported using marijuana on school property in the past 30 days, rates appear to be increasing in the Virgin Islands but decreasing in the US. In the Virgin Islands, rates increased from 4.0% in 1997 to 6.6% in 2007—though there was little change from 2006. In contrast they decreased from a high of 8.8% in 1995 to 4.5% in 2005 in the US (Figure 30). In the Virgin Islands in 2007, males (10.9%) and 10th graders (8.0%) were more likely to report using marijuana on school property than other subgroups (Figure 31).

Figure 30. Current (Past 30-Day) Marijuana Use on School Property among Youths in Grades 9-12, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

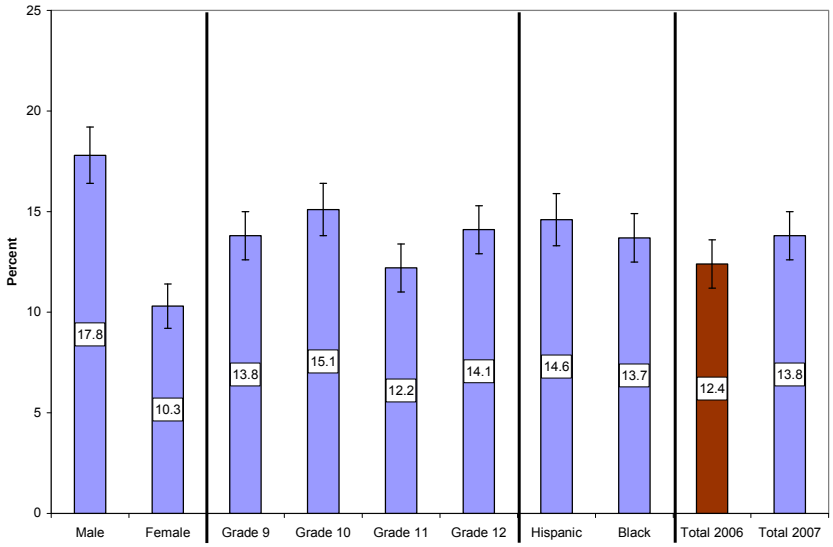
Figure 31. Current (Past 30-Day) Marijuana Use on School Property among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

Figure 32 shows that 13.8% of Virgin Islands students used marijuana and fonta together in 2007, slightly higher than in 2006 (12.4%). Use was higher among males (17.8%) and slightly higher among 10th graders (15.1%).

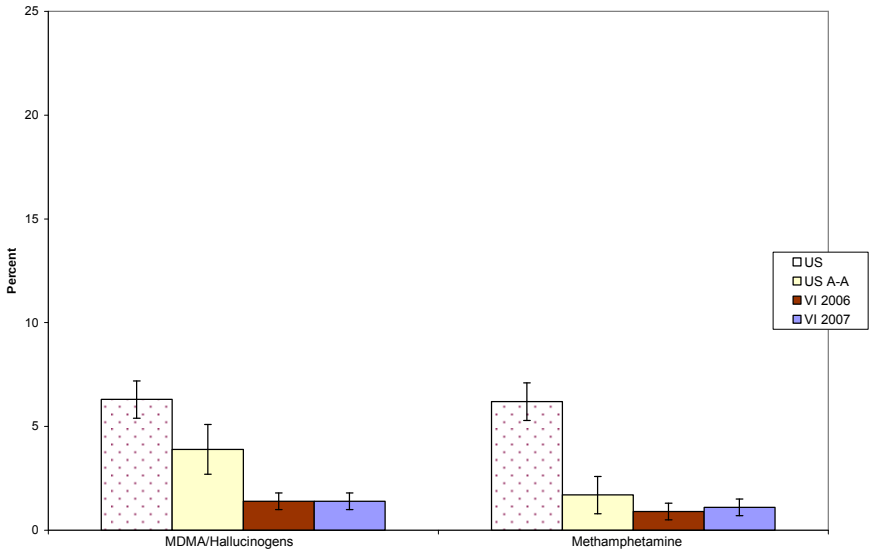
Figure 30. Current (Past 30-Day) Marijuana + Fonta Use among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 33 shows little change in reported use of hallucinogens or methamphetamines from 2006 to 2007, and that the rates are considerably lower than the US use rates, particularly for hallucinogens.

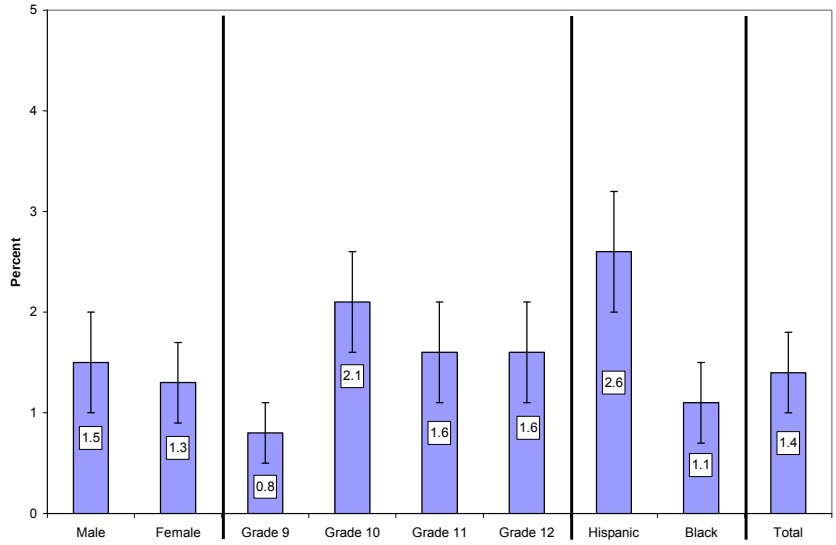
Figure 33. Lifetime Hallucinogen and Methamphetamine Use Among Youths in Grades 9-12, Virgin Islands (2007) and US (2005)



Sources: 2005 Youth Risk Behavior Surveillance System & 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

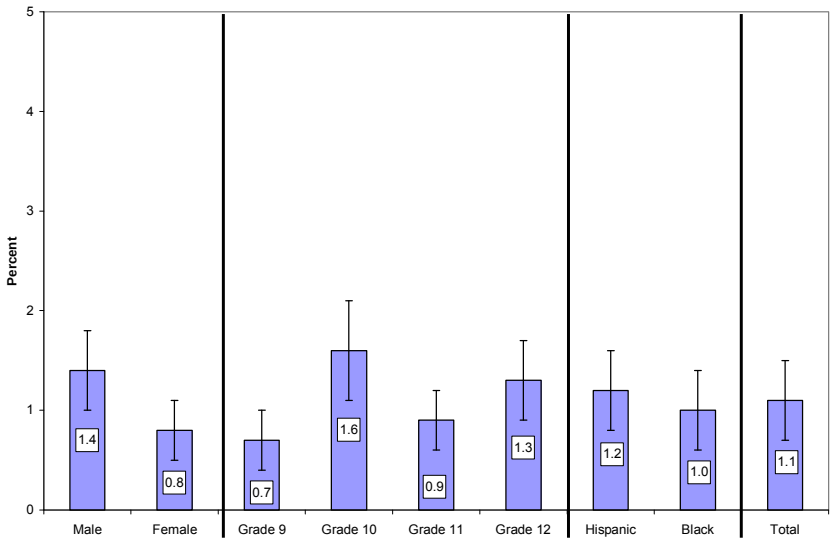
In subgroup analyses, the rates of hallucinogen and methamphetamine use were very low and confidence limits overlapping, so we could not tell with sufficient confidence whether any particular group reported higher use rates (Figures 34 and 35).

Figure 34. Lifetime Hallucinogen Use among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

Figure 35. Lifetime Methamphetamine Use among Youths in Grades 9-12, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

Summary of Alcohol, Tobacco, and Other Drug Use

Alcohol continues to be the most commonly used substance among Virgin Islands public high school students, with 46% of students reporting past-30 day use in 2007. Rates in the Virgin Islands are now approaching or surpassing US mainland rates. As summarized in Table 3, the following alcohol indicators increased significantly from 2006 to 2007: current alcohol use, binge alcohol use, and being a passenger in a car with a drinking driver. Current alcohol use rates were higher among 11th and 12th graders and Hispanic students. Especially risky alcohol use, such as binge drinking and drinking and driving, was highest among males, 12th graders, and Hispanic students.

Table 3. Summary of Substance Use Rates Among Virgin Islands Public High School Students, 2007

Substance	Indicator	Percent 2007	2006-2007 Change*
Alcohol	Current use	45.9	↑
	Use before age 13	38.9	–
	Binge use	16.2	↑
	Driving after drinking	10.3	–
	Passenger with drinking driver	25.9	↑
	Use on school property	7.5	–
Tobacco	Current cigarette use	2.8	–
	Cigarette use before age 13	5.8	–
	Daily cigarette use (≥ 20 of past 30 days)	0.6	–
	Heavy cigarette use among current users (> 10 per day)	18.1	–
	Past year smokers who tried to quit	51.7	↓
	Current smokeless tobacco use	1.1	–
Marijuana and other illicit drugs	Current marijuana use	20.2	–
	Marijuana use before age 13	16.3	–
	Driving after smoking marijuana	8.3	–
	Passenger with driver smoking marijuana	29.8	–
	Marijuana use on school property	6.6	–
	Current marijuana + fonta use	13.8	–
	Lifetime hallucinogen use	1.4	–
	Lifetime methamphetamine use	1.1	–

* ↑ or ↓ indicates change that exceeds the range of measurement uncertainty (i.e., upper or lower confidence limits).

Current cigarette use rates among Virgin Islands high school students were much lower than rates in the US (2.8% vs. 23.0%) and remained stable from 2006 to 2007. Heavy use rates, however, increased significantly from 2006 to 2007 (Table 3). Males and 10th and 12th graders reported the highest rates of heavy cigarette use. More than half of those who had smoked during the past year had tried to quit for at least one day, but this rate was lower in 2007 than in 2006.

Since 2003, current marijuana use rates in the Virgin Islands appear to be increasing and possibly surpassing US rates, although rates remained relatively stable from 2006 to 2007 (Table 3). Rates of marijuana use were highest among males, 10th graders, and 11th graders. Males and 10th graders also showed higher rates of especially risky use, such as driving a car after smoking marijuana. Use on school property was higher among males and 10th graders.

Violence-Related Behaviors

Carrying Weapons

Rates of carrying a weapon on school property had been equivalent and decreasing among both Virgin Islands and US students through 2003 (Figure 36). However, Virgin Island rates increased from 7.3% in 2003 to 13.2% in 2006, and then held steady at 12.6% in 2007. As shown in Figures 37 and 38, rates for both weapons and handguns in particular were higher among males, 10th graders and Hispanic students.

Figure 36. Percentage of Youths in Grades 9-12 Who Carried a Weapon on School Property in the Past 30 Days, Virgin Islands and US, 1993-2007

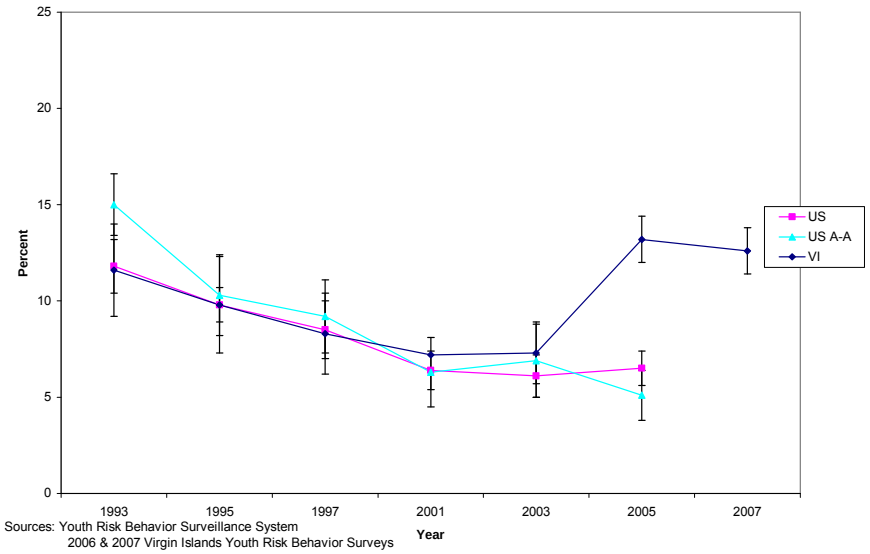
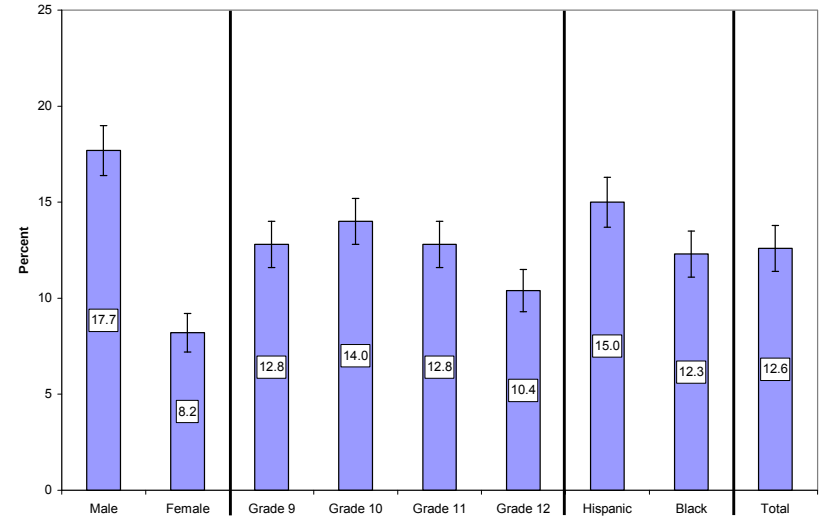
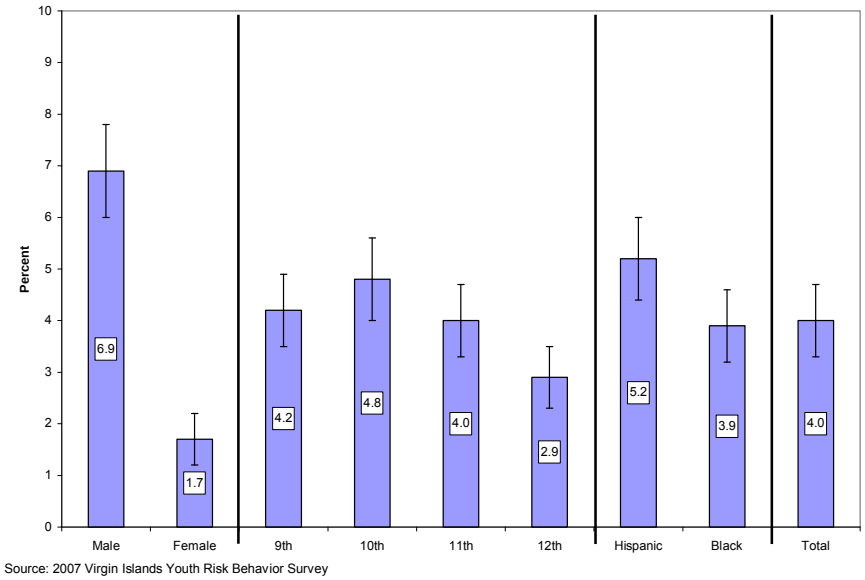


Figure 37. Percentage of Youths in Grades 9-12 Who Carried a Weapon on School Property in the Past 30 Days, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

Figure 38. Percentage of Youths in Grades 9-12 Who Carried a Handgun to School in the Past Year, by Gender, Grade, and Race, Virgin Islands, 2007

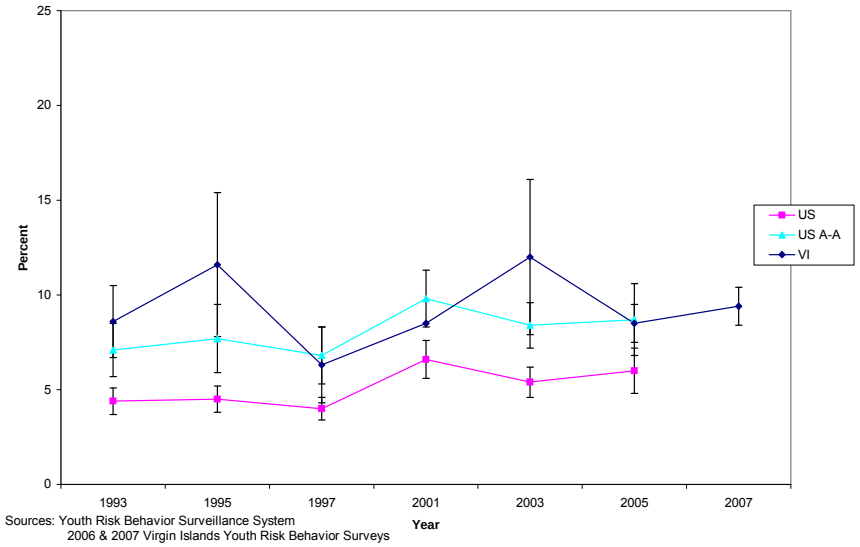


Source: 2007 Virgin Islands Youth Risk Behavior Survey

Feelings of Safety and Physical Fighting

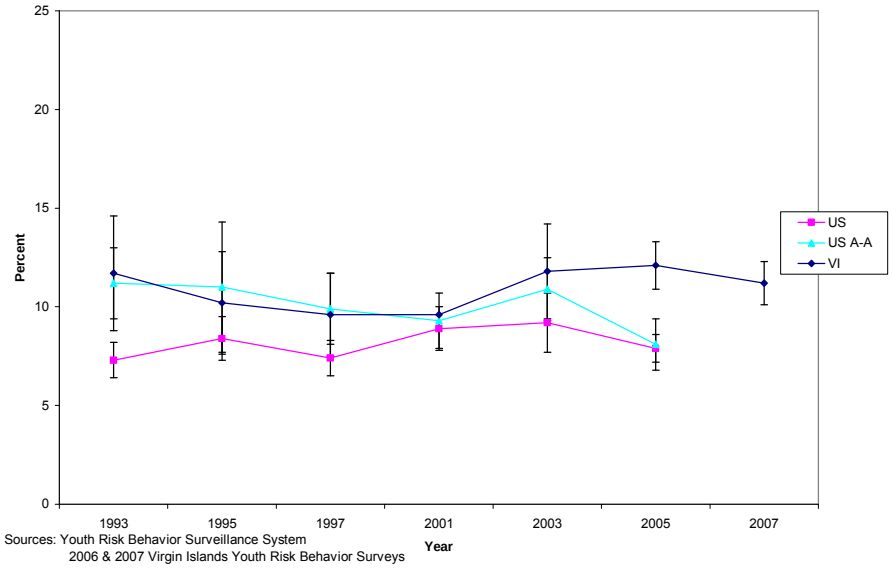
As indicated in Figures 39 through 41, school safety has been consistently a greater concern among Virgin Islands students than US students. In 2007, Virgin Islands students were more likely to report not attending school of personal safety reasons (9.4%), to have been threatened or injured on school property (11.2%), and to have been in a physical fight on school property (16.8%). Unlike the data on substance use, students did not report substantial increases in these behaviors from 2006. Virgin Island rates for school safety indicators have been similar to those for US African American students.

Figure 39. Percentage of Youths in Grades 9-12 Who Did Not Attend School in the Past 30 Days Because They Felt it was Unsafe, Virgin Islands and US, 1993-2007



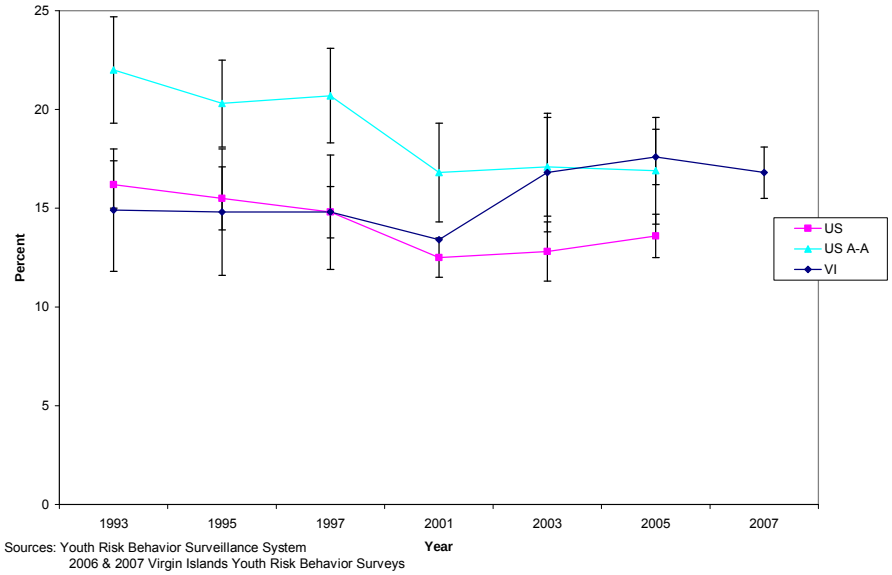
Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 40. Percentage of Youths in Grades 9-12 Who Were Threatened or Injured on School Property in the Past Year, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

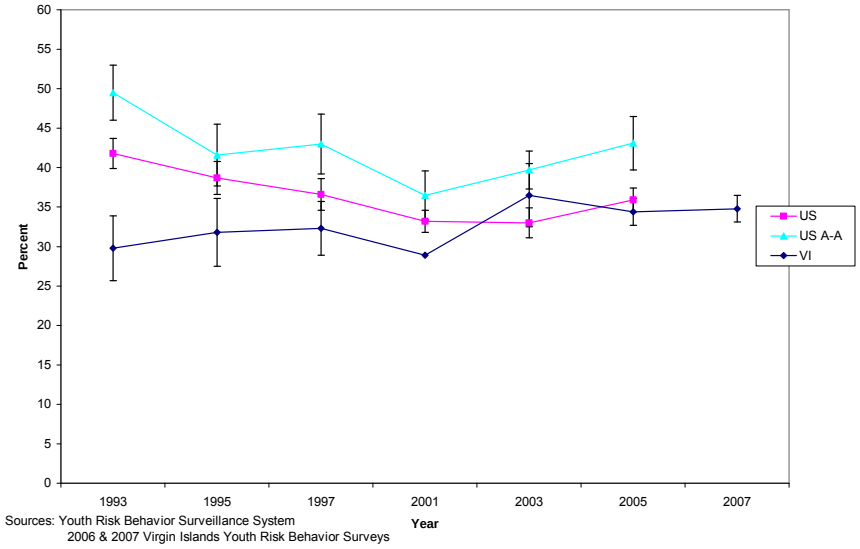
Figure 41. Percentage of Youths in Grades 9-12 Who Were in a Physical Fight on School Property in the Past Year, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 42 indicates that rates of physical fighting among Virgin Islands students (34.8%) were about the same as those reported by US students (35.9%) but lower than those reported by US African American students (43.1%).

Figure 42. Percentage of Youths in Grades 9-12 Who Were in a Physical Fight in the Past Year, Virgin Islands and US, 1993-2007

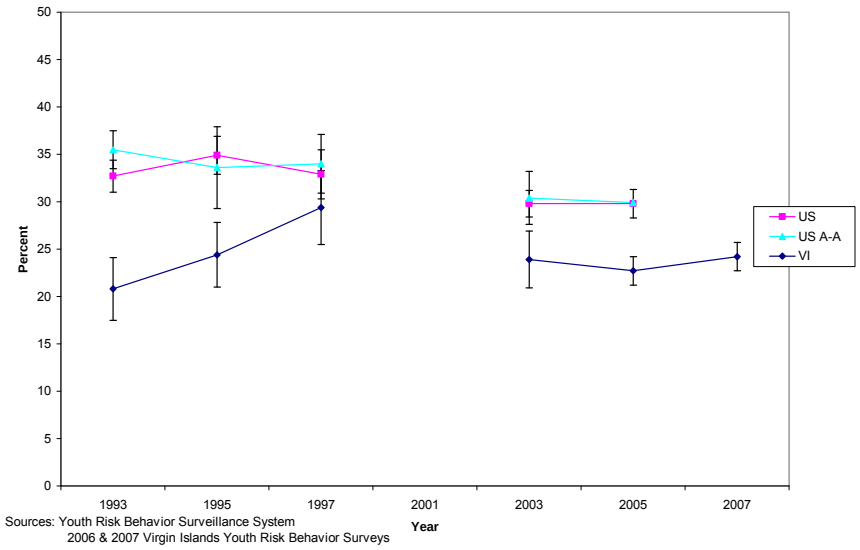


Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Theft

Rates of property theft/damage were lower in Virgin Islands public high schools compared to US public high schools, with 2007 rates standing at 24.2% for Virgin Islands students (up slightly from 2006) and 29.8% and 29.9% for US students and US African American students, respectively, in 2005 (Figure 43).

Figure 43. Percentage of Youths in Grades 9-12 Who Had Property Stolen or Damaged on School Property in the Past Year, Virgin Islands and US, 1993-2007

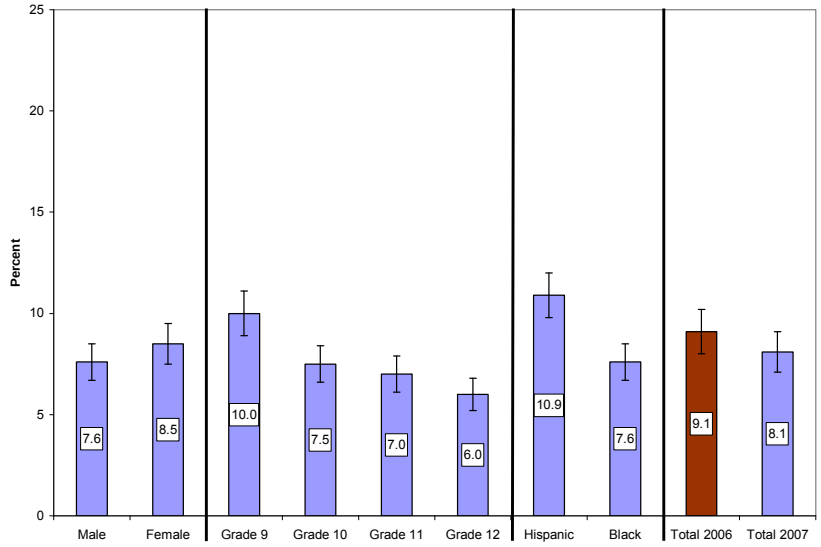


Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Bullying

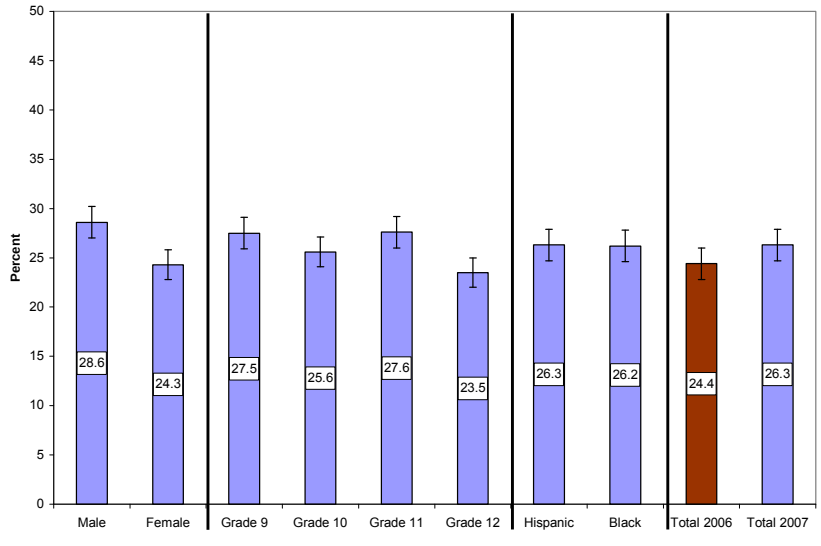
Figure 44 shows that 8.1% of Virgin Islands students reported being bullied, slightly down from 2006. The highest rates are among 9th graders (10.0%) and Hispanic students (10.9%).[4] Figure 45 displays much higher rates of bullying someone else, with 26.3% of students reporting that they bullied (slightly higher than in 2006). Higher rates of bullying were reported by males (28.6%) and 9th graders (27.5%) and 11th graders (27.6%).

Figure 44. Percentage of Youths in Grades 9-12 Who Were Bullied in the Past 30 Days, by Gender, Grade, and Race, Virgin Islands, 2007



Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 45. Percentage of Youths in Grades 9-12 Who Bullied Someone in the Past 30 Days, by Gender, Grade, and Race, Virgin Islands, 2007



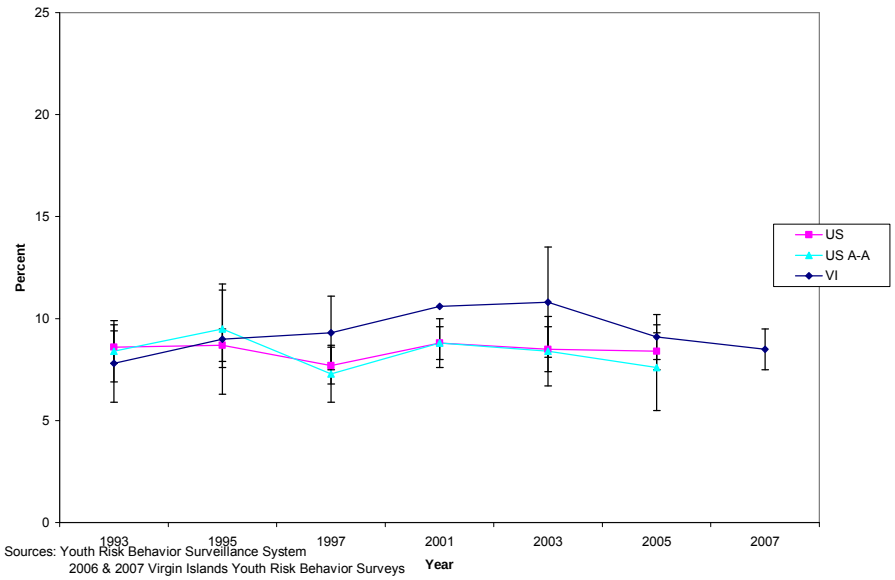
Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

[4] Bullying was defined as saying or doing unpleasant things to another student to make fun of, tease, embarrass, scare, or exclude him/her.

Suicidal Feelings and Attempts

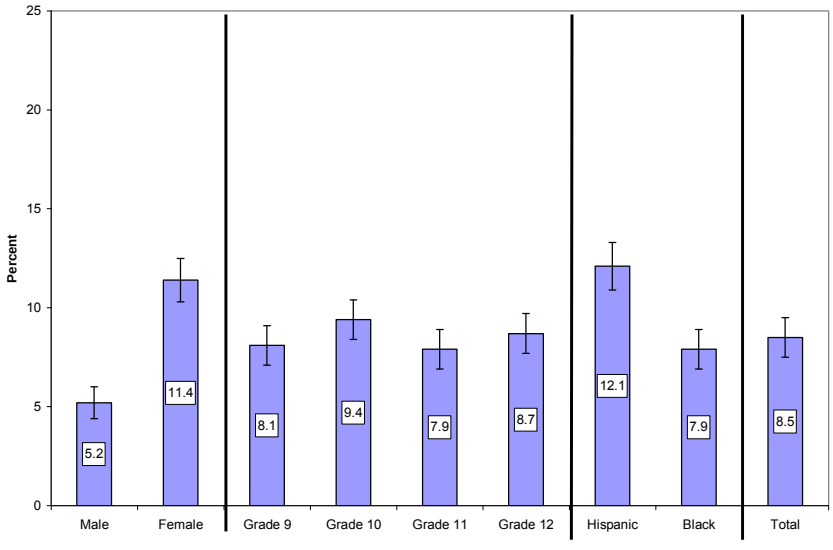
In 2007, 8.5% of Virgin Islands students reported attempting to commit suicide in the last year, down from 9.1% in 2006 (Figure 46). As shown in Figure 47, reported rates were over twice as high among females compared to males (11.4% vs. 5.2%), and also higher among Hispanic students (12.1%).

Figure 46. Percentage of Youths in Grades 9-12 Who Attempted Suicide in the Past Year, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

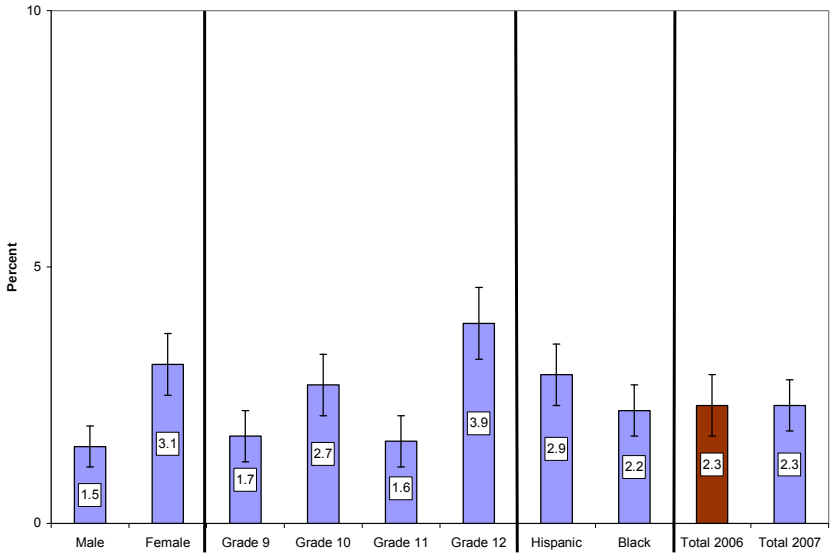
Figure 47. Percentage of Youths in Grades 9-12 Who Attempted Suicide in the Past Year, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

As shown in Figure 48, 2.3% of Virgin Islands students reported a suicide attempt resulting in injury (no change from 2006). Such attempts were higher among females compared to males (3.1% vs. 1.5%), and were elevated among 10th graders (2.7%) and 12th graders (3.9%).

Figure 48. Percentage of Youths in Grades 9-12 Who Attempted Suicide Resulting in Injury in the Past Year, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Summary of Violence-Related Behaviors

As summarized in Table 4, students reported little change in violence-related behaviors and concerns from 2006 to 2007. As we discussed in our 2006 report, school safety appears to be a greater concern among Virgin Islands public high school students compared to their US mainland counterparts. Virgin Islands youth were more likely to report not attending school for personal safety reasons, to have been threatened or injured on school property, to have been in a physical fight on school property, and to have carried a weapon on school property, compared to US students. However, rates of property theft/damage at school were higher in US mainland public schools. Over 25% of Virgin Islands students reported bullying other students, with males, 9th, and 11th graders reporting higher rates of bullying; 8.2% of students reported being bullied (9th graders and Hispanic students at higher rates). Suicide attempt rates were equivalent to US rates, much higher for females compared to males, and higher among Hispanic students.

Table 4. Summary of Violence-Related Behavior Indicators Among Virgin Islands Public High School Students, 2007

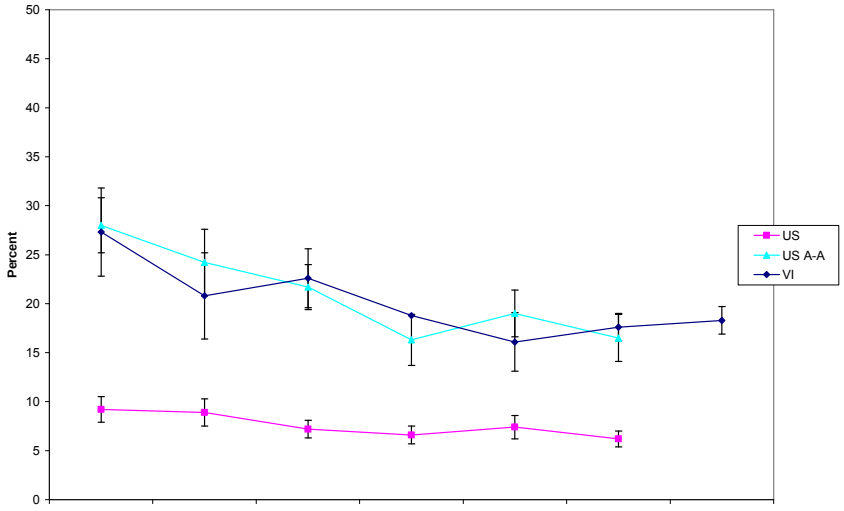
Indicator	Percent 2007	2006-2007 Change*
Carried weapon on school property in past month	12.6	−
Did not attend school in past month because felt it was unsafe	9.4	−
Threatened or injured on school property in past year	11.2	−
In a physical fight on school property in past year	16.8	−
In a physical fight in the past year	34.8	−
Had property stolen or damaged on school property in past year	24.2	−
Bullied by someone in past month	8.1	−
Bullied someone in past month	26.3	−
Attempted suicide in past year	8.5	−
Attempted suicide resulting in injury in past year	2.3	−

* ↑ or ↓ indicates change that exceeds the range of measurement uncertainty (i.e., upper or lower confidence limits).

Sexual Behaviors

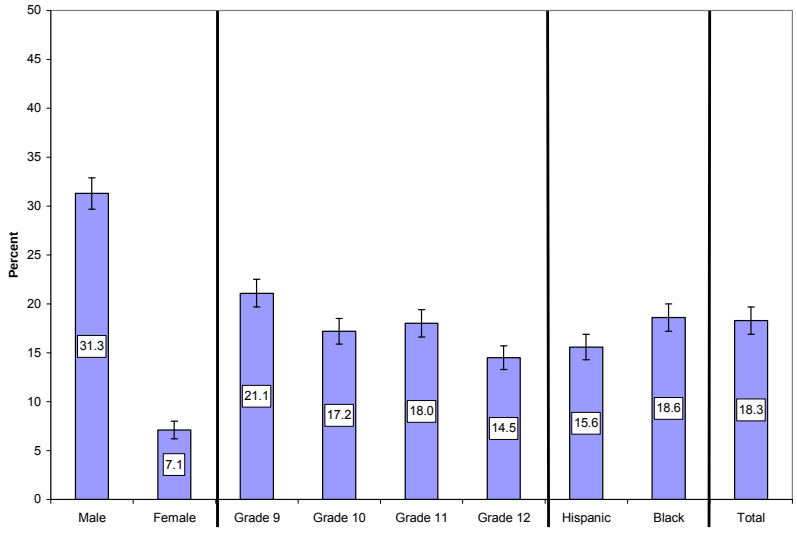
Figures 49 through 62 display data about sexual behaviors. Virgin Islands students have consistently reported having sex before age 13 at a higher rate than US students, although the Virgin Islands rate has decreased from 27.3% in 1993 to 18.3% in 2007 (Figure 51). Since 1993, Virgin Islands and US African American rates have been remarkably similar. Figure 52 indicates that males were much more likely to report early sexual intercourse compared to females (31.3% vs. 7.1%). The decline in rates by grade level again suggests a recall bias, with younger students reporting higher rates. Hispanic students may be less likely to report early onset intercourse.

Figure 49. Percentage of Youths in Grades 9-12 Who Had Sex Before Age 13, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

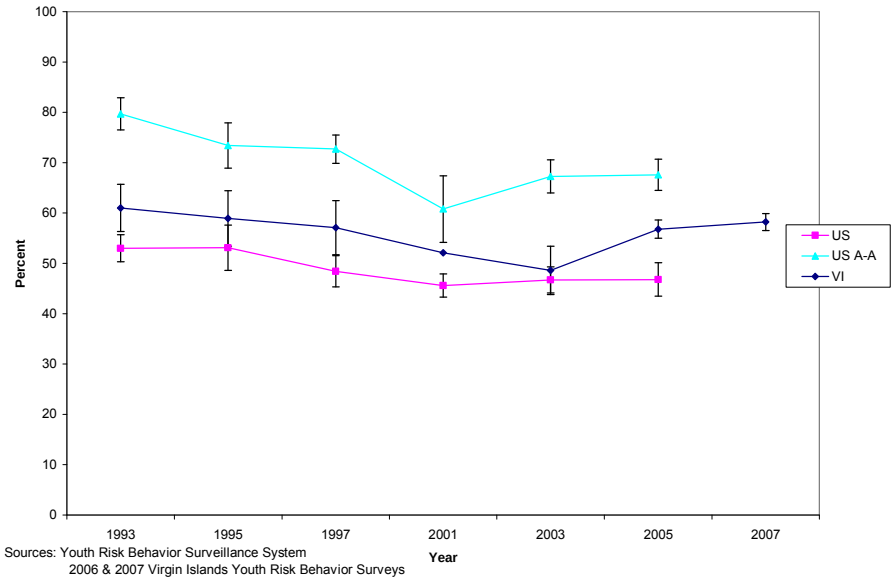
Figure 50. Percentage of Youths in Grades 9-12 Who Had Sex Before Age 13, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

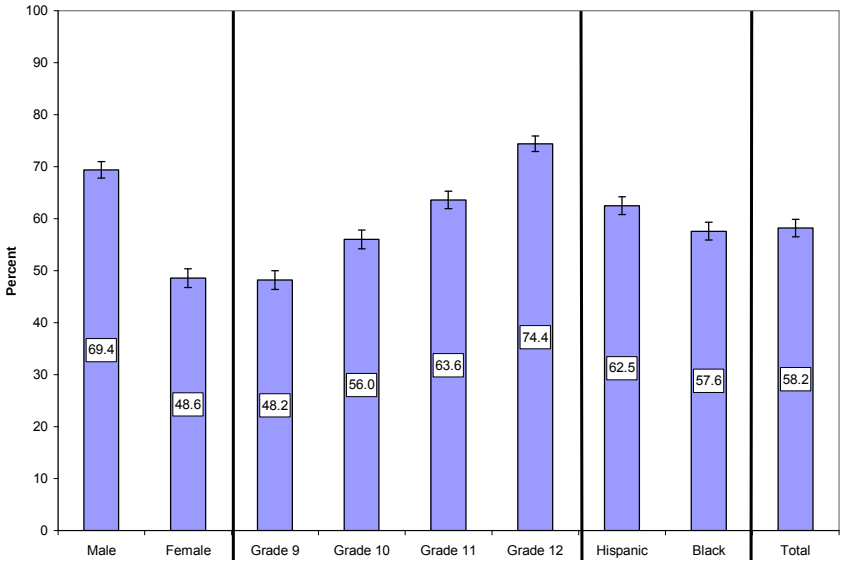
Virgin Islands students have consistently reported slightly higher rates of ever having sex compared to US rates. Although the Virgin Islands rate increased from 48.6% in 2003 to 56.8% in 2006, there was virtually no change in 2007 (Figure 51). Virgin Islands rates have been consistently lower than US African American rates. Subgroup analysis (Figure 52) revealed particularly high rates among males (69.4%), 11th graders (63.6%) and 12th graders (74.4%).

Figure 51. Percentage of Youths in Grades 9-12 Who Have Ever Had Sex, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 52. Percentage of Youths in Grades 9-12 Who Have Ever Had Sex, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

As shown in Figure 53, the rate of Virgin Islands students that reported having four of more sexual partners in their lifetime rose only slightly from 2006 to 2007. As in previous years, Virgin Islands students (24.2%) were more likely than US students (14.3%), but less likely than US African American students (28.2%), to report having had four or more sexual partners. 2007 subgroup analysis showed that males (37.6%), 11th graders (27.0%) and 12th graders (37.2%) were considerably more likely to report four or more sexual partners in their lifetimes than other students (Figure 54).

Figure 53. Percentage of Youths in Grades 9-12 Who Have Had Four or More Lifetime Sexual Partners, Virgin Islands and US, 1993-2007

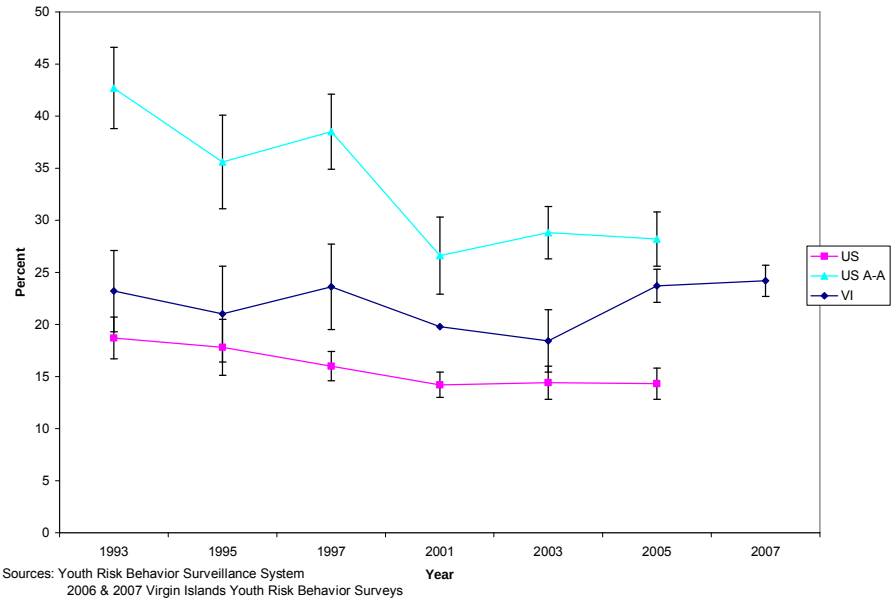
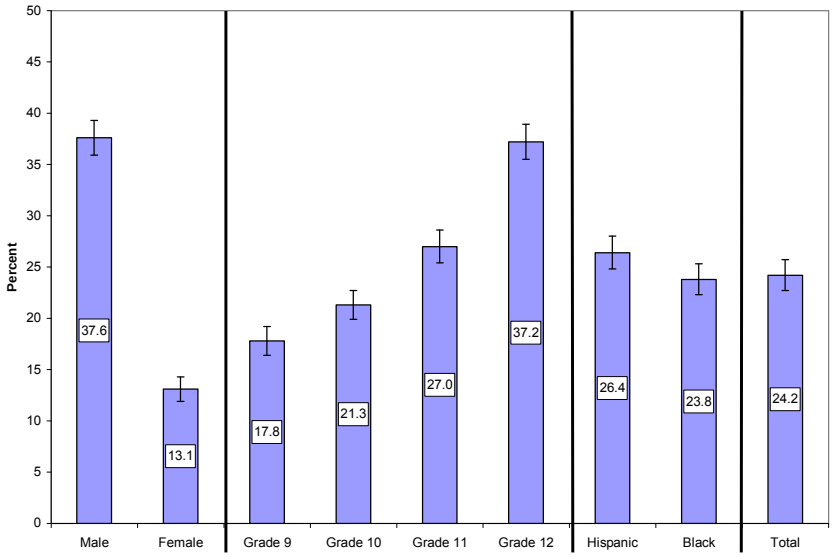
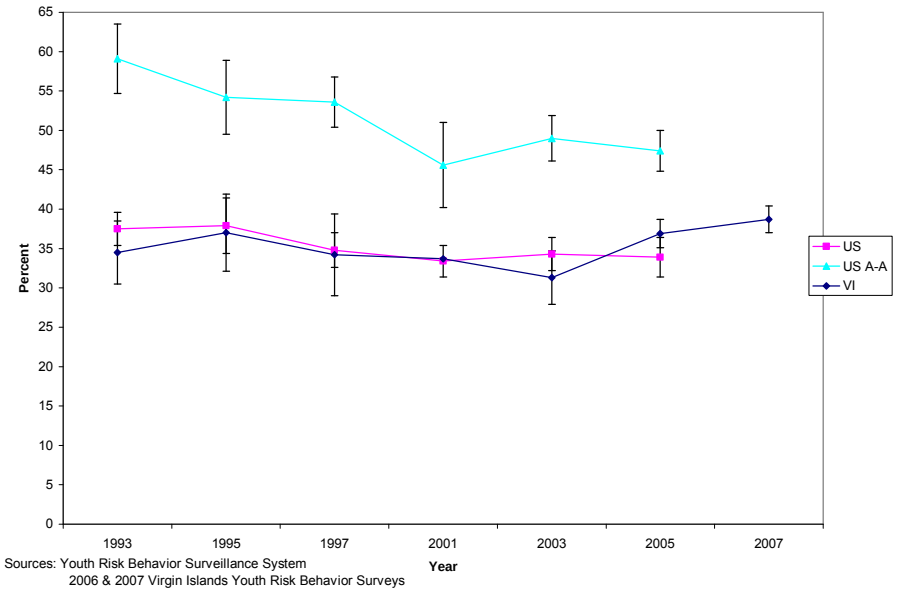


Figure 54. Percentage of Youths in Grades 9-12 Who Have Had Four or More Lifetime Sexual Partners, by Gender, Grade, and Race, Virgin Islands, 2007



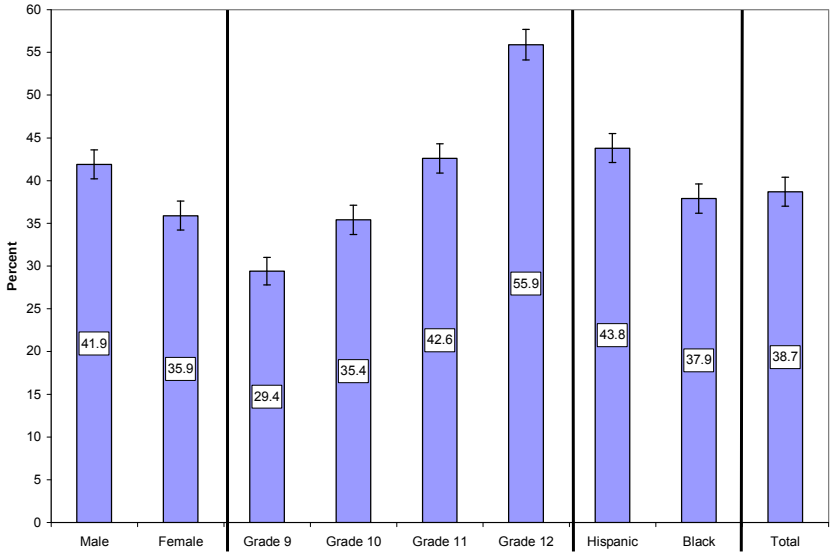
As shown in Figure 55, Virgin Islands students reported slightly higher rates of having had sex in the past three months in 2007 than in 2006 (36.9% vs. 38.7%). The Virgin Islands rate appears to be higher than the US rate but lower than the US African American rate. Subgroup analysis of the 2007 data showed that males (41.9%), 11th graders (42.6%) and 12th graders (55.9%) reported particularly high rates of recent sexual intercourse (Figure 56).

Figure 55. Percentage of Youths in Grades 9-12 Who Have Had Sex in the Past Three Months, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

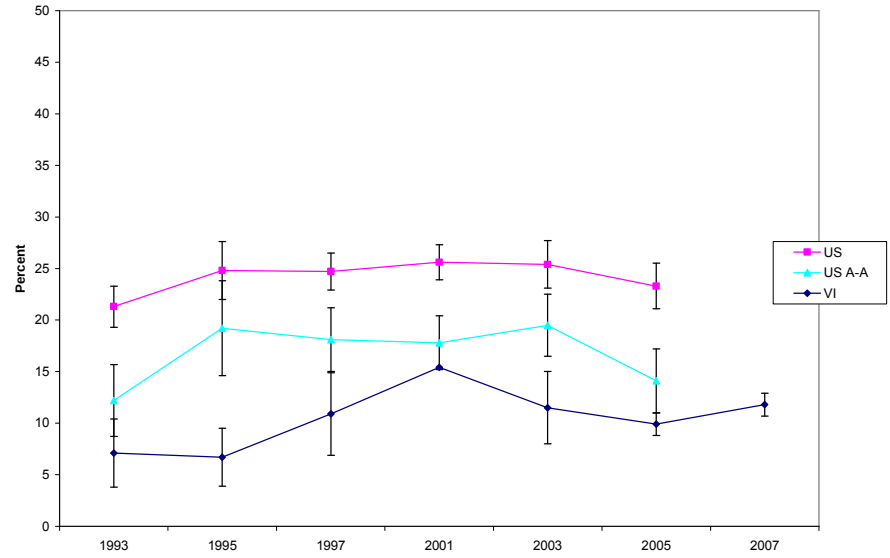
Figure 56. Percentage of Youths in Grades 9-12 Who Have Had Sex in the Past Three Months, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

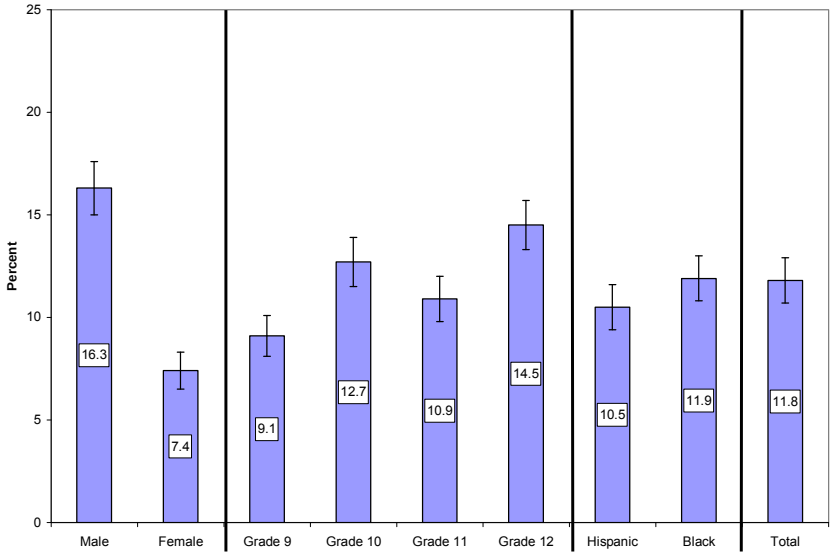
As indicated in Figure 57, US students have consistently reported engaging in the risky behavior of drinking and/or using drugs (including marijuana) before sex more frequently than both Virgin Islands students and US African American students. The 2007 Virgin Islands rate (11.8%) appears to have increased slightly since 2006 (9.9%). Subgroup analysis showed that the rate for males was more than twice that for females (16.3% vs. 7.4%), and that rates among 10th and 12th graders (12.7% and 14.5%) were higher than rates in other grades (Figure 58).

Figure 57. Percentage of Youths in Grades 9-12 Who Drank or Used Drugs Before Sex, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

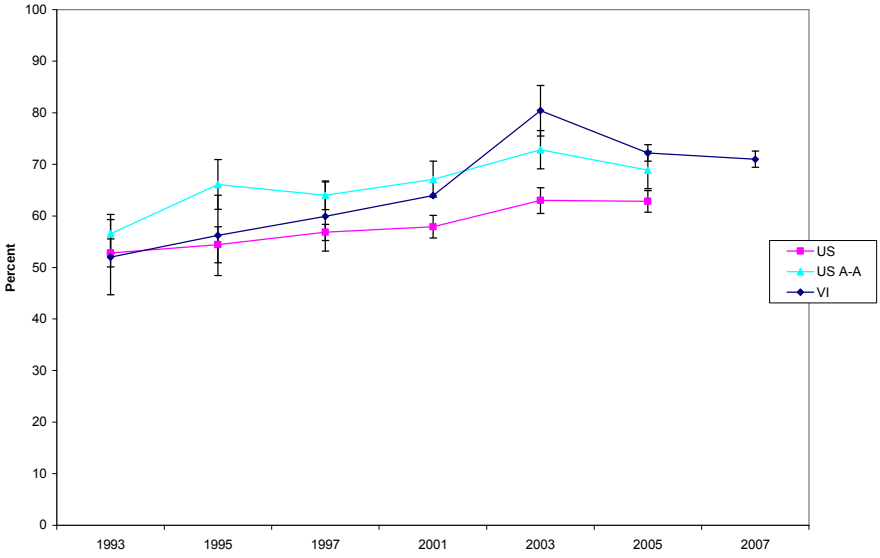
Figure 58. Percentage of Youths in Grades 9-12 Who Drank or Used Drugs Before Sex, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

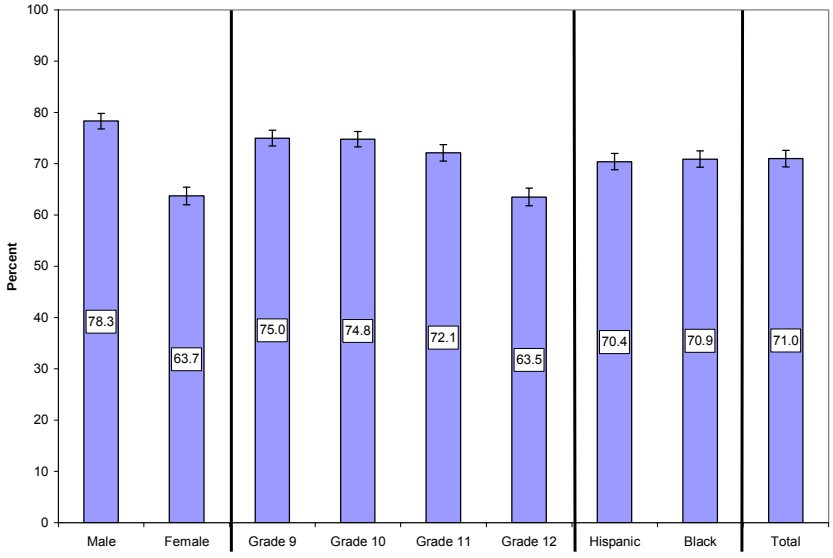
As shown in Figure 59, the rate of condom use by Virgin Islands students was virtually unchanged from 2006 to 2007 (72.2% vs. 71.0%). Virgin Islands youth and US African American students have consistently tended to report similar rates of condom use, both of which are higher than average US rates. 2007 subgroup analysis showed that males (78.3%), 9th graders (75.0%), and 10th graders (74.8%) reported higher rates of condom use than other students (Figure 60).

Figure 59. Percentage of Youths in Grades 9-12 Who Used a Condom Before Sex, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

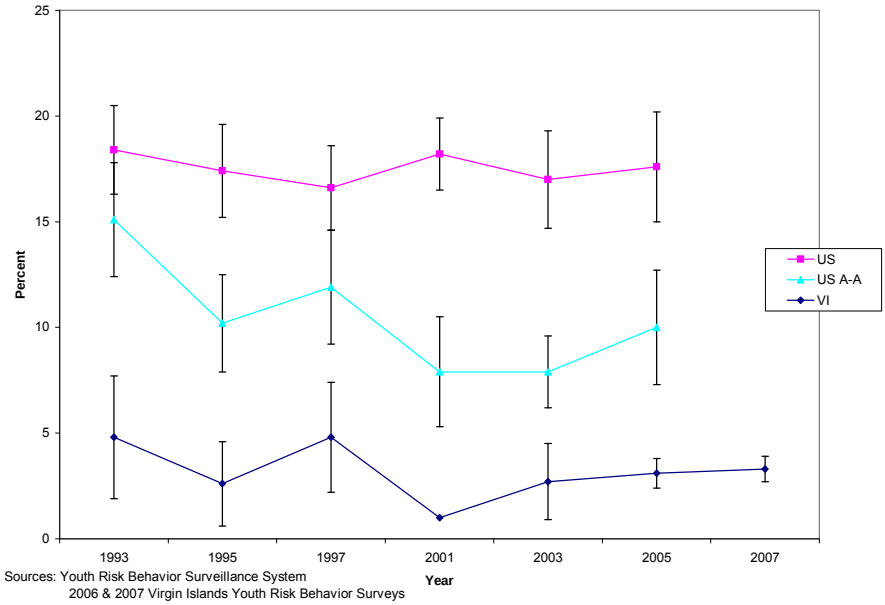
Figure 60. Percentage of Youths in Grades 9-12 Who Used a Condom Before Sex, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

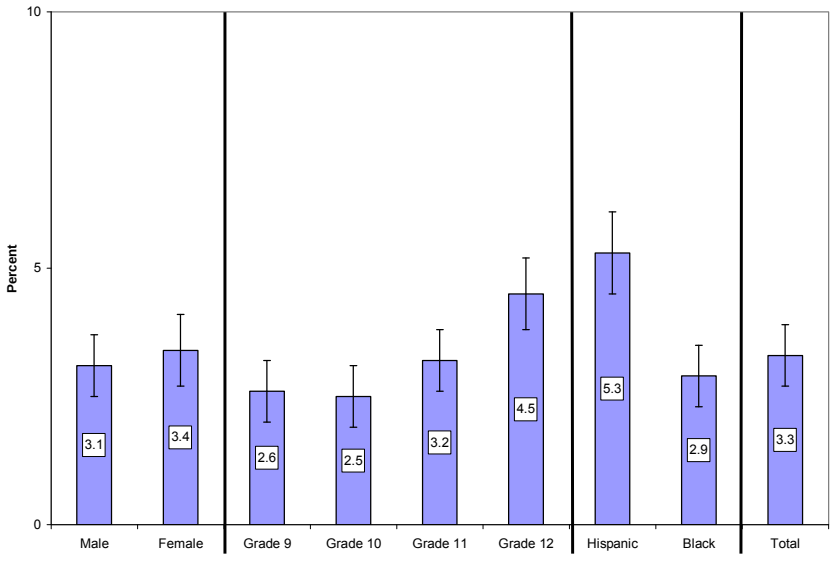
As indicated in Figure 61, self-reported birth control pill (BCP) use rates among public high school students have been consistently almost six times higher in the US compared to the Virgin Islands, with rates of use in the Virgin Islands never exceeding five percent. Rates for US African American students have been in between those for US and Virgin Islands students. Subgroup analysis showed an apparent increase in BCP use by grade level and higher rates among Hispanics (Figure 62).

Figure 61. Percentage of Youths in Grades 9-12 Who Used Birth Control Pills to Prevent Pregnancy, Virgin Islands and US, 1993-2007



Sources: Youth Risk Behavior Surveillance System
2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 62. Percentage of Youths in Grades 9-12 Who Used Birth Control Pills to Prevent Pregnancy, by Gender, Grade, and Race, Virgin Islands, 2007



Source: 2007 Virgin Islands Youth Risk Behavior Survey

Summary of Sexual Behaviors

As summarized in Table 5, students reported little change in rates of sexual behaviors from 2006 to 2007. Rates of sexual behaviors among Virgin Islands high school students continued to be higher than US rates: Virgin Islands students were more likely to have ever had sex, have sex before age 13, and have had four or more partners. Virgin Islands students were much less likely to have used birth control pills before last intercourse. On the positive side, Virgin Islands high school students were less likely to engage in some risky sexual behaviors. For instance, Virgin Islands youth were less likely to drink and use drugs before sex and were more likely to use a condom before intercourse, compared to US mainland public high school students.

Table 5. Summary of Sexual Behaviors Among Virgin Islands Public High School Students, 2007

Indicator	Percent 2007	2006-2007 Change*
Had sex before age 13	18.3	−
Have ever had sex	58.2	−
Have had four or more lifetime sexual partners	24.2	−
Have had sex in the past three months	38.7	−
Drank or used drugs before having sex	11.8	−
Used a condom before having sex	71.0	−
Used birth control pills to prevent pregnancy	3.3	−

* ↑ or ↓ indicates change that exceeds the range of measurement uncertainty (i.e., upper or lower confidence limits).

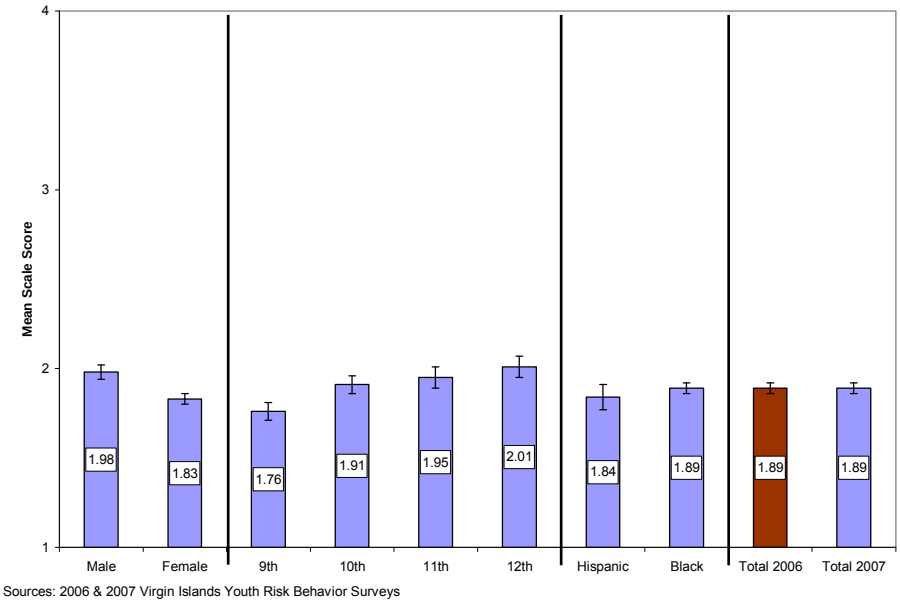
Factors Related to Substance Use

In this section, we provide data on factors that are related to substance use. Some of these factors appear to increase the risk of substance abuse (e.g., favorable attitudes toward substance use), some appear to provide protection against substance abuse (e.g., school bonding), and others simply increase our understanding of how adolescents navigate a world in which they may be exposed to substances (e.g., whom they would turn to discuss substance abuse and related problems).

Student Attitudes Favorable Toward Drug Use

We asked students how wrong they thought it was for someone their age to smoke cigarettes, drink alcohol, or smoke marijuana. Students responded on a scale from 1 (very wrong) to 4 (not wrong at all). Thus, lower scores are more desirable. On average, students had negative attitudes toward substance use (mean score of 1.89), indicating that they thought substance use was "wrong" (Figure 63). Subgroup differences were minimal, with males and 12th graders slightly less likely to indicate that drug use was wrong. There was no change in attitudes from 2006 to 2007.

Figure 63. Mean Attitudes Favorable Toward Drug Use,
By Gender, Grade, and Race, Virgin Islands, 2007

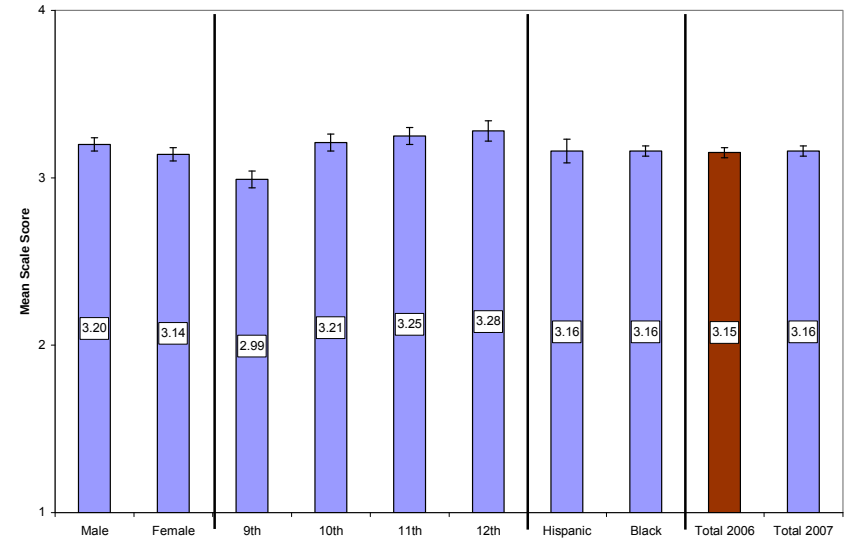


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Community Law Enforcement Favorable to Drug Use

Students rated their perceptions of law enforcement efforts around substance use (e.g., "If a kid smoked marijuana in your neighborhood, would he or she be caught by the police?"), with lower scores reflecting perceptions of strong law enforcement. Students reported perceptions of law enforcement that were favorable to drug use (mean score = 3.16), with no change from 2006 to 2007 (Figure 64).

Figure 64. Mean Community Law Enforcement Favorable to Drug Use Scale Score, By Gender, Grade, and Race, Virgin Islands, 2007

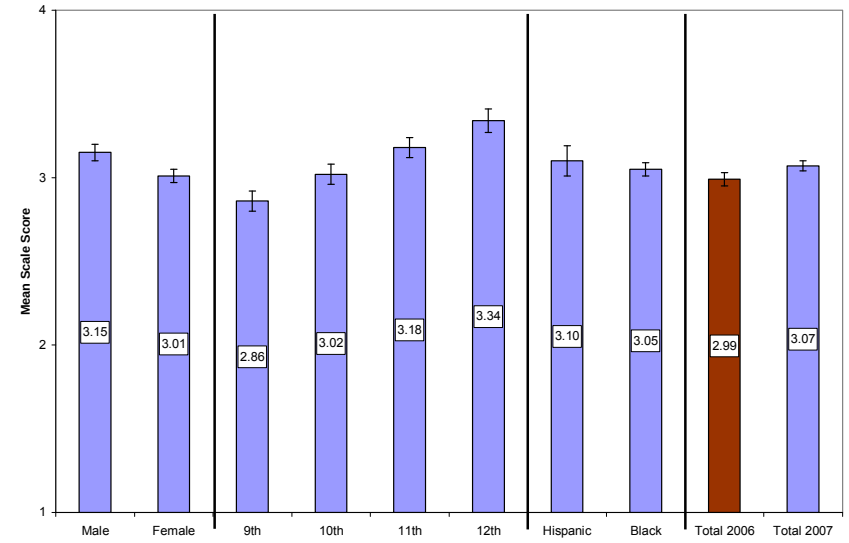


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Perceived Availability of Drugs

Students reported that drugs were readily available in their communities (mean score = 3.07, Figure 65), a slight increase from 2006. Males and 11th and 12th graders were more likely to report this availability.

Figure 65. Mean Perceived Availability of Drugs Scale Score, By Gender, Grade, and Race, Virgin Islands, 2007

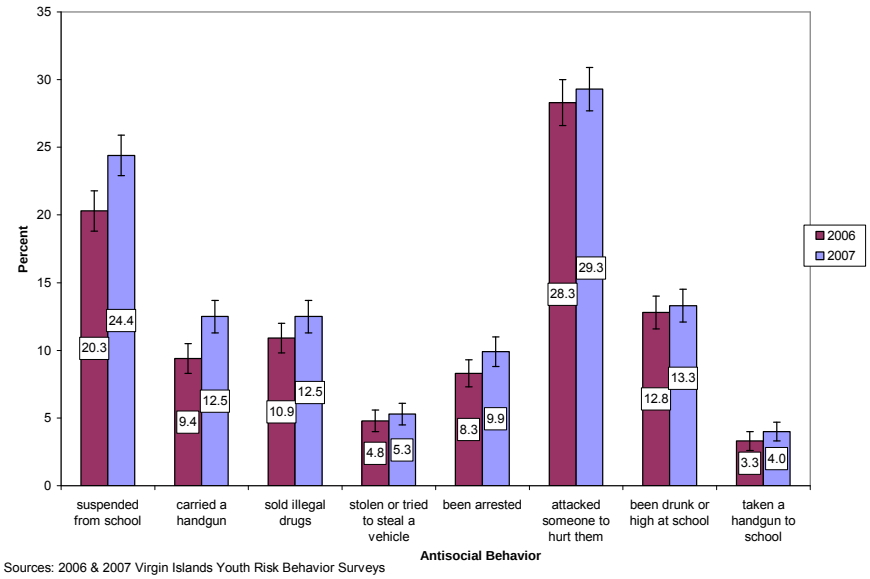


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Student Antisocial Behaviors

As shown in Figure 66, a relatively high percentage of students reported engaging in an antisocial behavior at least once during the past year: 29% attacked someone, 24% were suspended from school, 13% were drunk or high at school, 12% carried a handgun, and 12% sold illegal drugs. Significant increases from 2006 were reported for suspensions and carrying a gun.

Figure 66. Percentage of Students Reporting that they Engaged in Various Antisocial Behaviors in the Past Year, Virgin Islands, 2006 and 2007

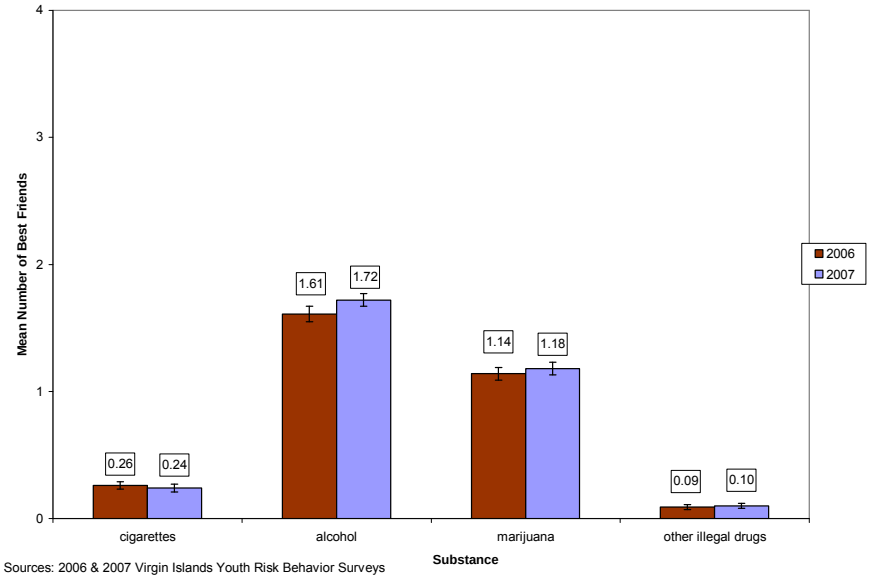


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Peer Substance Use

On average, students reported that 1.7 of their best friends used alcohol (an increase from 2006) and 1.2 used marijuana in the past year (Figure 67). Differences among subgroups were minimal.

Figure 67. Mean Number of Best Friends Using Various Substances in the Past Year, Virgin Islands, 2006 and 2007

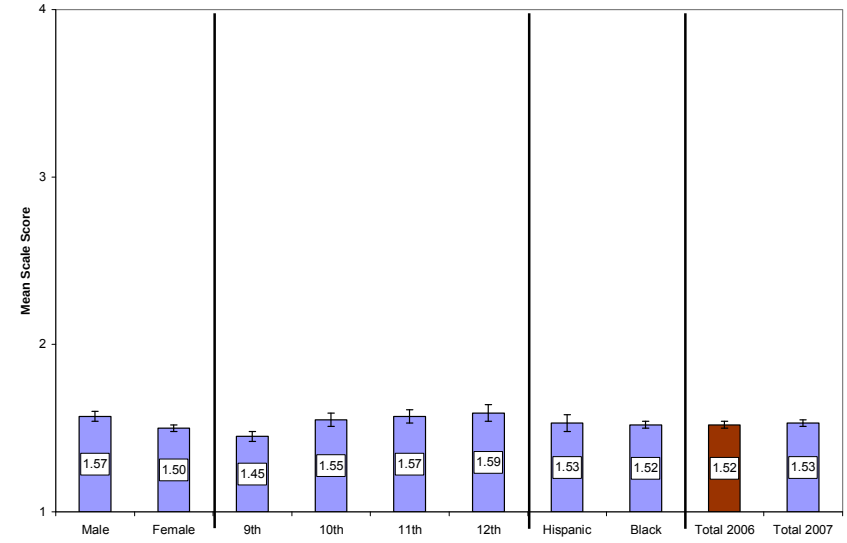


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Parental Attitudes Favorable to Drug Use

Virgin Islands public high school students indicated low levels of parental tolerance for drug use (mean scale score = 1.53, Figure 68). There was no change from 2006 and subgroup differences in 2007 were minimal.

Figure 68. Mean Parental Attitudes Favorable to Drug Use Scale Score, By Gender, Grade, and Race, Virgin Islands, 2007

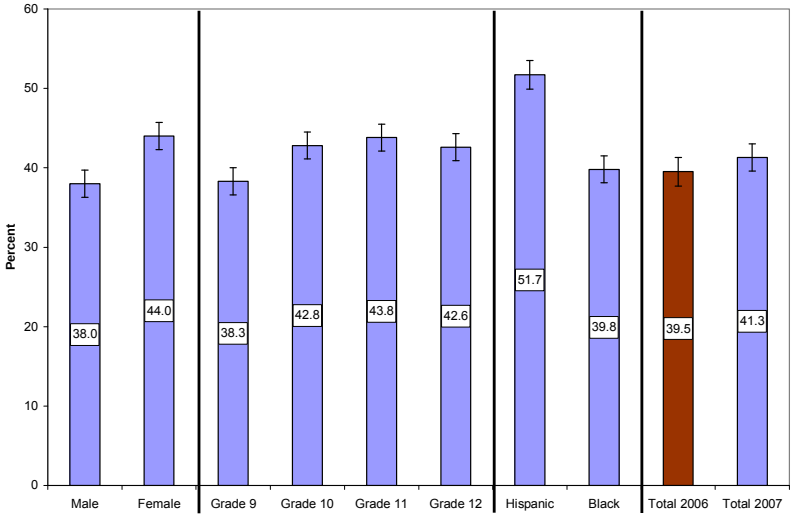


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Survey

Family History of Substance Abuse

A high percent of students reported severe family alcohol or drug problems (41.3%), with females, Hispanics, and upper classmen reporting higher rates of severe alcohol or drug problems in the home (Figure 69). There was no change from 2006.

Figure 69. Youths in Grades 9-12 Reporting a Family Member with a Severe Alcohol of Drug Problem, Virgin Islands, 2007

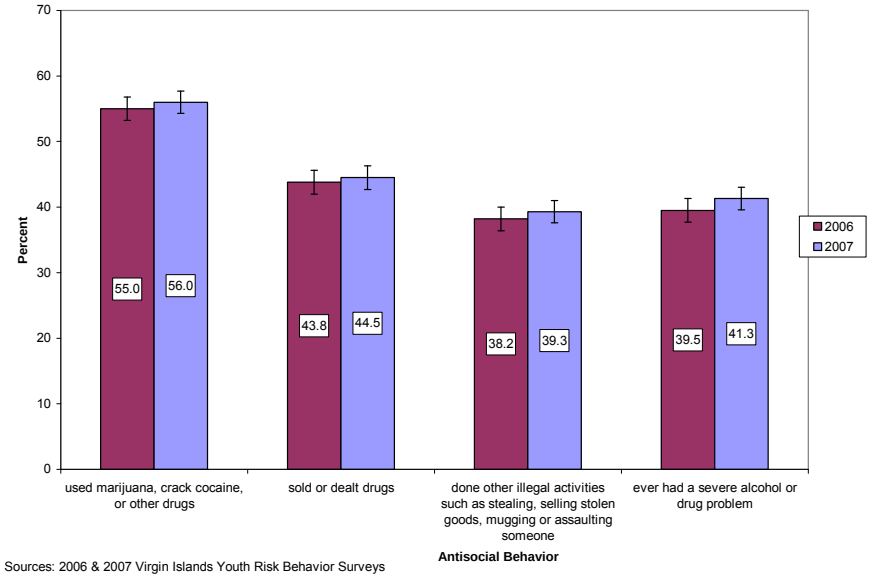


Source: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Other Adult Drug Use/Antisocial Behavior

A high percent of students reported knowing an adult who had engaged in antisocial behaviors (Figure 70), with no change from 2006.

Figure 70. Percentage of Students Reporting Knowing Personally in the Past Year Adults (over age 21) Who Have Engaged in Various Antisocial Behaviors, Virgin Islands, 2006 and 2007

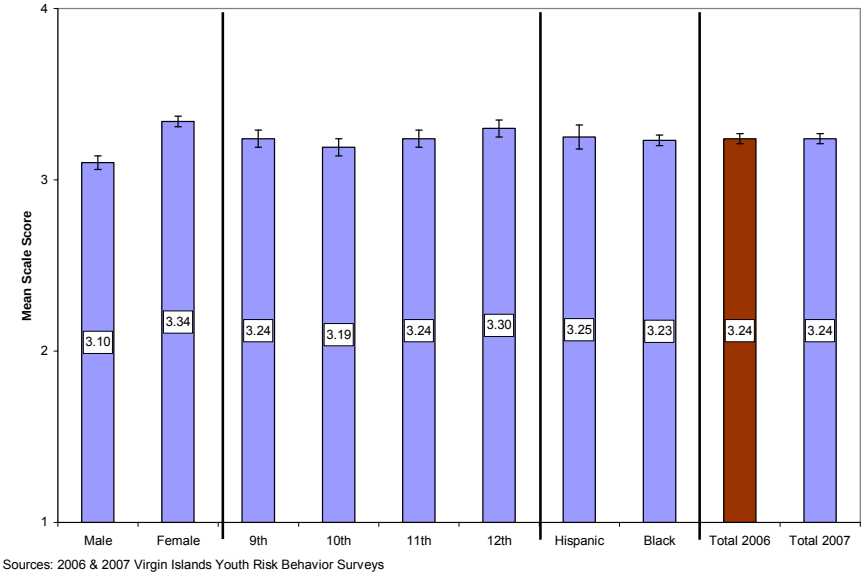


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Perceived Risk of Drug Use

Students perceived that the risk of harm from using substances was relatively high (overall mean = 3.24, Figure 71) with females scoring slightly higher than males. Other subgroup differences were minimal and there was no change from 2006.

Figure 71. Mean Perceived Risk of Drug Use Scale Score, By Gender, Grade, and Race, Virgin Islands, 2007

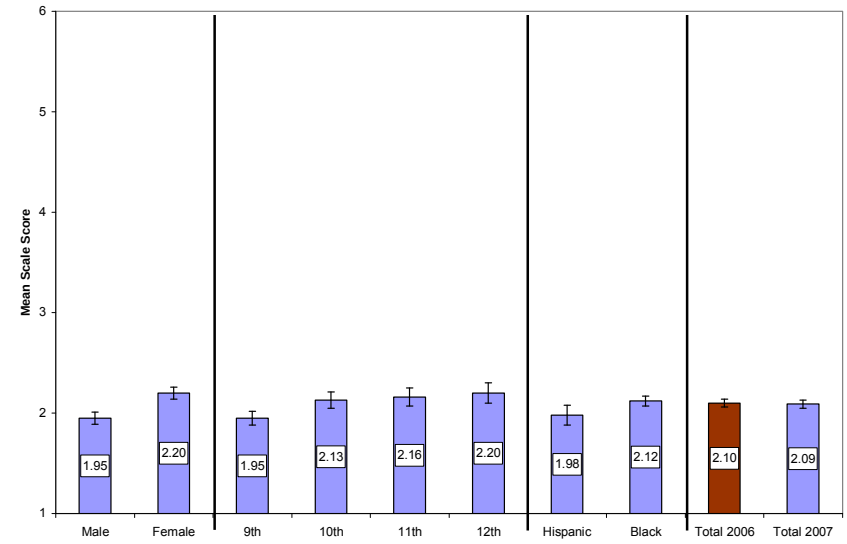


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Prosocial Involvement

Students reported limited prosocial involvement (e.g., time spent with a club or a social organization), with an overall mean scale score of 2.09 on a 6-point scale (Figure 72). Males, 9th graders, and Hispanic students were less likely to be positively involved in their communities; there were no change from 2006.

Figure 72. Mean Prosocial Involvement Scale Score,
By Gender, Grade, and Race, Virgin Islands, 2007

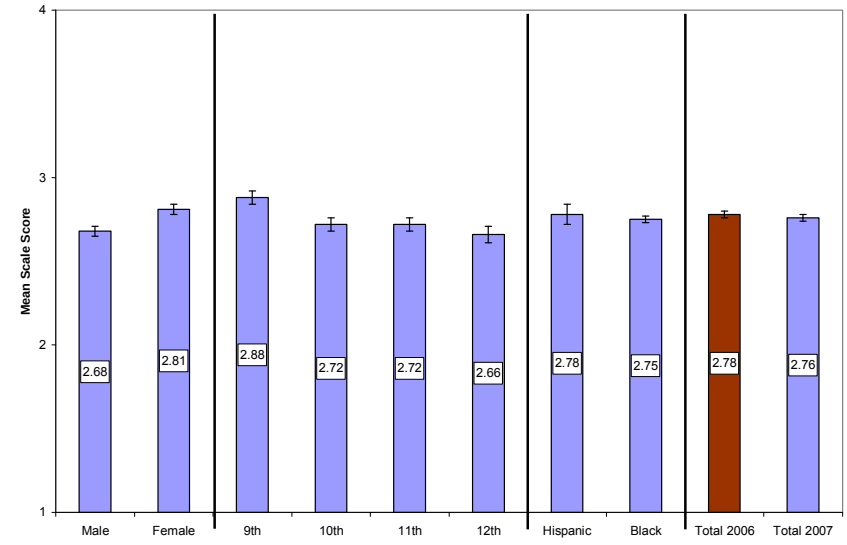


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Effective Family Management

Students reported a moderate level of effective family management (e.g., clear family rules and monitoring). The overall mean was 2.76, subgroup differences were minimal, and there was no change from 2006 (Figure 73).

Figure 73. Mean Family Management Scale Score,
By Gender, Grade, and Race, Virgin Islands, 2007

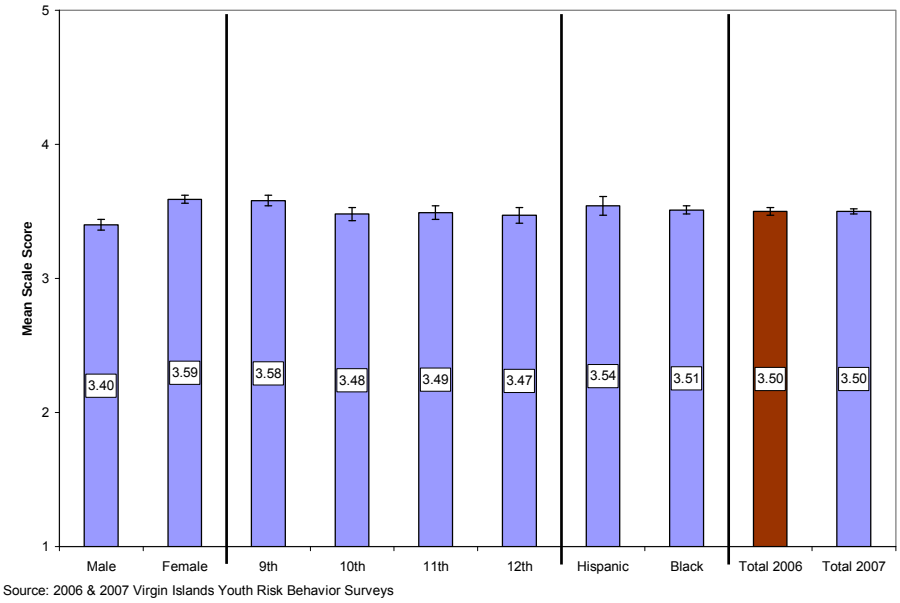


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

School Bonding

As shown in Figure 74, Virgin Islands students reported a moderate level of school bonding (overall mean = 3.50 out of 5). Subgroup differences were minimal and there was no change from 2006.

Figure 74. Mean School Bonding Scale Score,
By Gender, Grade, and Race, Virgin Islands, 2007

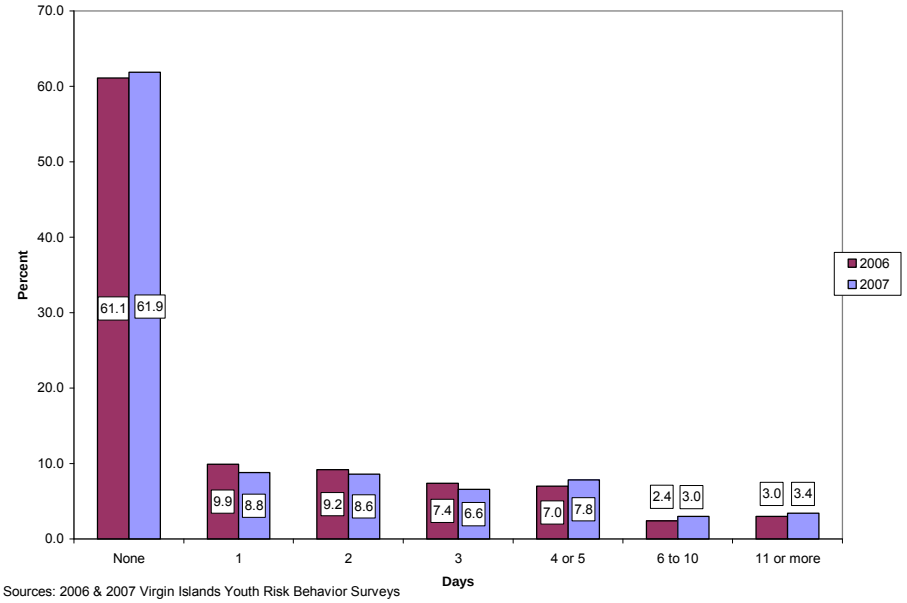


Source: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Truancy

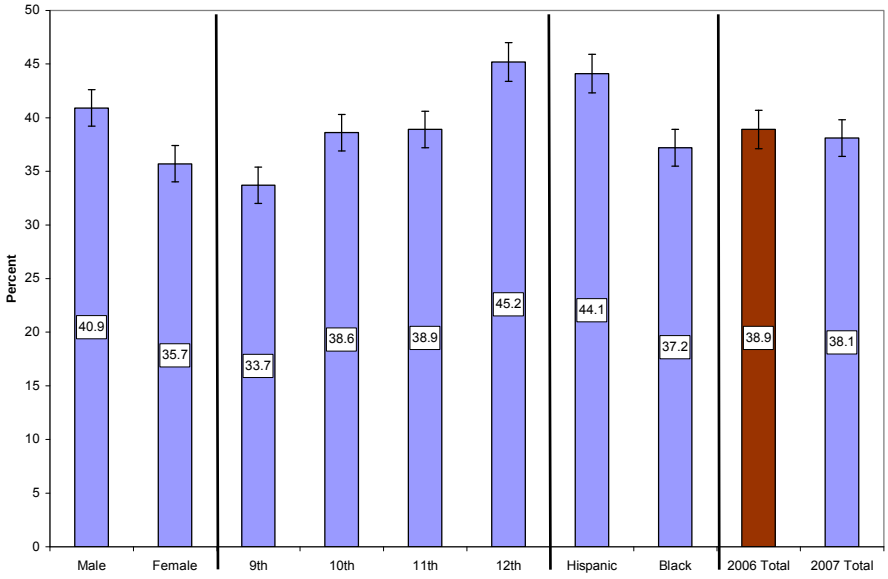
Although most students did not skip school at all during the four weeks prior to the survey, nearly 40% did, and more than 6% skipped school for 6 or more days (Figure 75). Change from 2006 was minimal. Of the approximately 40% reporting cutting class for one or more days, males, 12th graders, and Hispanic students were more likely to cut class, compared to other demographic subgroups (Figure 76).

Figure 75. Number of Days Cut Class During the Past Four Weeks, Youths in Grades 9-12, Virgin Islands, 2006 and 2007



Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 76. Percentage of Students in Grades 9-12 Who Cut Class for One or More Days During the Past Four Weeks, By Gender, Grade, and Race/Ethnicity, Virgin Islands, 2007

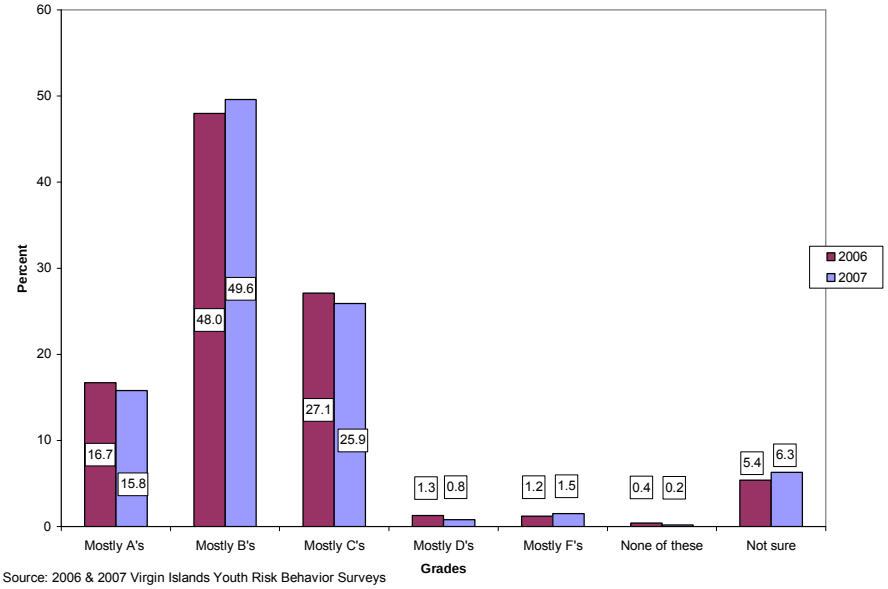


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Grades in School

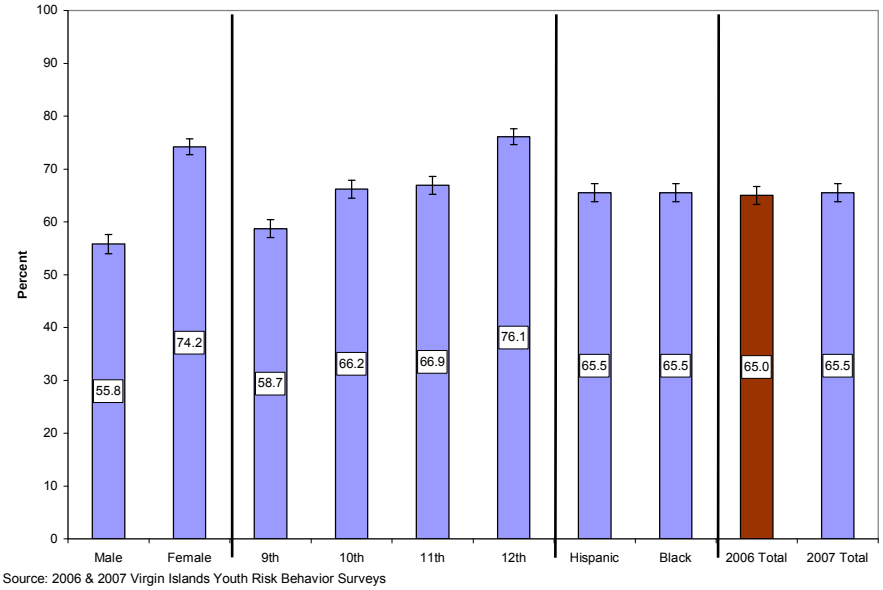
Students reported getting mostly B's and C's in school, on average, during the past year (Figure 77). Only 2.3% reported receiving "mostly D's" and "mostly F's," though even more (6.3%) were unsure. Females and 12th graders were more likely to report receiving mostly A's and B's in the past year (Figure 78). Because 12th graders were much more likely (76.1%) to report receiving high grades and because there was an increase across grade levels, there may have been a cohort effect whereby the more successful students remained in school. Changes from 2006 were minimal.

Figure 77. Grades in School During the Past Year,
Youths in Grades 9-12, Virgin Islands, 2007



Source: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Figure 78. Percentage of Youths in Grades 9-12 Receiving mostly A's and B's in School During the Past Year, By Gender, Grade, and Race/Ethnicity, Virgin Islands, 2007

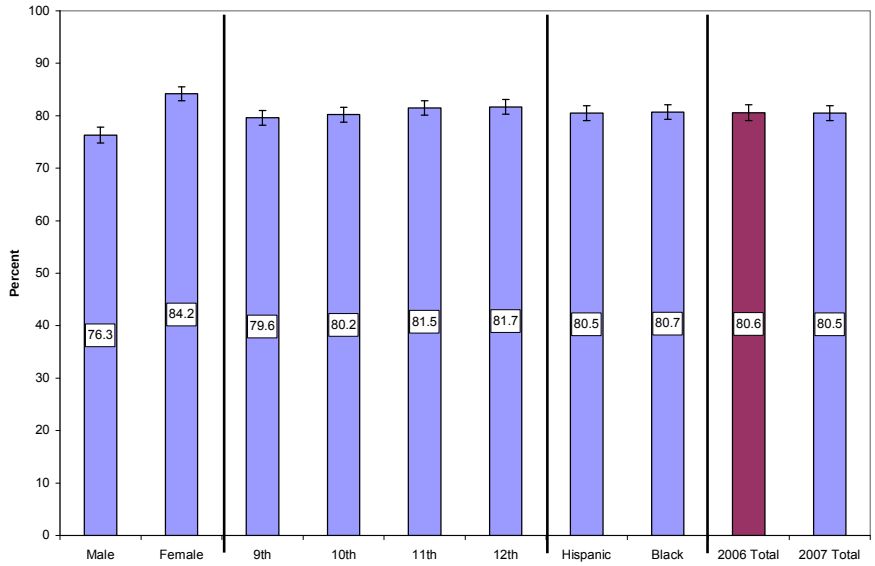


Source: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Religiosity

Approximately 80% of Virgin Islands students reported attending religious services or activities (same as 2006), with females more likely to attend services than other subgroups (Figure 79).

Figure 79. Percentage of Youth in Grades 9-12 Reporting Attending Religious Services or Activities, By Gender, Grade, and Race, Virgin Islands, 2007

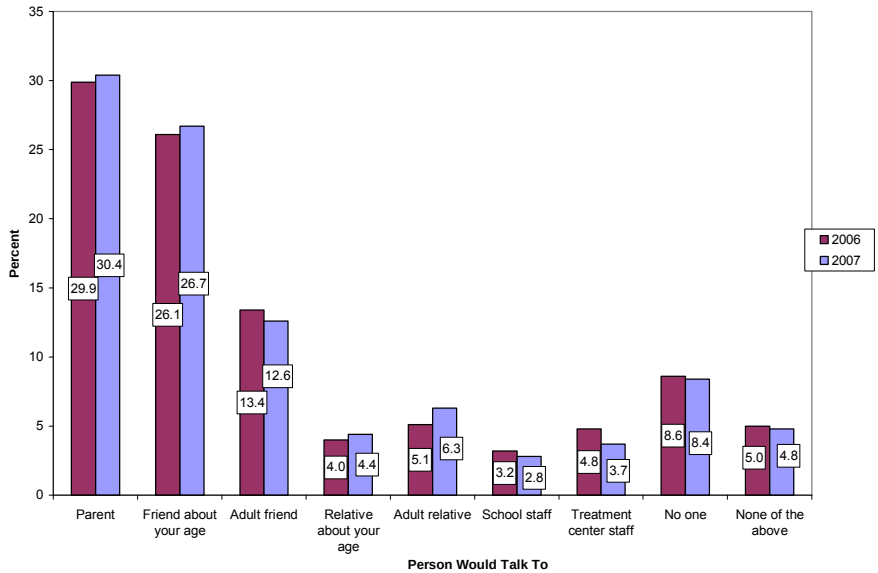


Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Attachments with Others

Students were most likely to talk to a parent (30%), friend their own age (27%), or an adult friend (13%) about a substance use problem they might have (Figure 80). Changes from 2006 were minimal.

Figure 80. Most Likely Person to Talk to About a Substance Use Problem, Youths in Grades 9-12, Virgin Islands, 2007



Sources: 2006 & 2007 Virgin Islands Youth Risk Behavior Surveys

Finally, the majority of respondents (58%) reported they had spoken to parents or an adult in the family about AIDS or HIV, 87% reported having an adult in their life to turn to for advice, and 64% reported that their parents ask them at least weekly about how they are doing in school.

Summary of Factors Related to Substance Use

As summarized in Table 6, there were few changes in students' report of factors related to substance use from 2006 to 2007. Only three indicators showed significant increases: student suspensions from school, students carrying a handgun, and associating with close friends who used alcohol in the past year.

Table 6. Summary of Factors Related to Substance Use Among Virgin Islands Public High School Students, 2007

Indicator	Value	2006-2007 Change**
	Mean Score*	
Student attitudes favorable toward drug use	1.89	–
Community law enforcement favorable to drug use	3.15	–
Perceived availability of drugs	3.07	–
Parental attitudes favorable to drug use	1.53	–
Perceived risk of drug use	3.24	–
Prosocial involvement (scale 1 – 6)	2.09	–
Effective family management	2.76	–
School bonding (scale 1 – 5)	3.50	–
Student antisocial behaviors (past year)	% reporting	
Suspended from school	24.4	↑
Carried a handgun	12.5	↑
Sold illegal drugs	12.5	–
Stolen or tried to steal a vehicle	5.3	–
Been arrested	9.9	–
Attacked someone with the intention of hurting them	29.3	–
Been drunk or high at school	13.3	–
Taken a handgun to school	4.0	–
Peer substance use (past year)	Mean # of friends using	
Cigarettes	0.24	–
Alcohol	1.70	↑
Marijuana	1.18	–
Other illegal drugs	0.10	–
	% reporting	
Family history of substance use	41.3	–
Other adult use/antisocial behavior (past year)		–
Used marijuana, crack cocaine, or other drugs	56.0	–
Sold or dealt drugs	44.5	–
Done other illegal activities (stealing, selling stolen goods, mugging or assaulting someone)	39.3	–
Truancy (past year, % reporting)	38.1	–
Grades in school (past year, % reporting mostly A's and B's)	65.5	–
Religosity (% attending religious services/activities)	80.5	–

* on a scale of 1 – 4 except where noted

** ↑ or ↓ indicates change that exceeds the range of measurement uncertainty (i.e., upper or lower confidence limits).

As discussed in our 2006 report, we found many positive findings among Virgin Islands public high school students. Students generally reported that they feel substance use is wrong and that there is a high degree of risk in using substances. They also reported that their parents generally feel that substance use is wrong. Students reported effective family management, positive school bonding, attachment to other adults and friends, and a high degree of attendance at religious services. All of these factors can help create an environment of low risk of, and high protection against, substance abuse. On the negative side students reported perceptions that law enforcement is favorable to substance use, perceptions that it is easy to obtain substances, antisocial behaviors, family histories of substance abuse, knowledge of other adults who use substances and have engaged in antisocial behaviors, truancy, and low levels of participation in prosocial activities. Subgroup analyses revealed that male and Hispanic students are more likely to report higher levels of risk factors and lower levels of protective factors than other students.

Public-Private School Differences

In this section, we provide results for the private school students. As indicated in the Sample Demographics section, private school survey respondents included significantly more upper classmen and fewer Black students, so in evaluating differences between public and private school students, we controlled for these differences by entering age, gender, and race (Black or other race) into multiple regression equations treating each indicator as the dependent variable and attendance at public or private school as the independent variable. Because there were relatively few private school respondents, we report only overall results for the sample (unweighted) and provide no subgroup analyses within the private school respondent subsamples.

Table 7 provides information about substance use, violence-related and sexual behaviors, and factors related to substance use for the 2007 Virgin Islands YRBS private school student sample, comparison to the 2006 private school sample, and comparison to the 2007 public school sample.

Table 7. Summary of Substance Use, Violence-related and Sexual Behaviors, and Factors Related to Substance Use Among Virgin Islands Private High School Students, 2007

Substance/ Behavior	Indicator	Percent/ Value 2007	2006-2007 Change *	Difference 2007 Private vs. Public*
Alcohol	Current use	41.4	↓	↓
	Use before age 13	33.4	–	↓
	Binge use	15.6	–	–
	Driving after drinking	11.3	↓	–
	Passenger with drinking driver	24.5	–	–
	Use on school property	6.4	–	–
Tobacco	Current cigarette use	5.4	↓	–
	Cigarette use before age 13	7.9	–	–
	Daily cigarette use (≥ 20 of past 30 days)	0.8	↓	–
	Heavy cigarette use among current users (> 10 per day)	8.3	–	–
	Past year smokers who tried to quit	63.8	–	–
	Current smokeless tobacco use	2.3	–	–
	In same room with someone who was smoking in past week	40.0	↓	↑
	In same car with someone who was smoking in past week	15.7	–	–
Marijuana and other illicit drugs	Current marijuana use	17.4	–	–
	Marijuana use before age 13	11.0	–	↓
	Driving after smoking marijuana	7.6	–	↓
	Passenger with driver smoking marijuana	22.1	–	–
	Marijuana use on school property	6.0	–	–
	Current marijuana + fonta use	9.0	–	↓
	Lifetime hallucinogen use	3.5	↓	↑
	Lifetime methamphetamine use	2.1	–	–
Violence-related behaviors	Carried weapon on school property in past month	11.0	–	–
	Did not attend school in past month because felt it was unsafe	9.5	↑	–
	Threatened or injured on school property in past year	14.0	–	–
	In a physical fight on school property in past year	14.2	–	–
	In a physical fight in the past year	28.5	–	↓
	Had property stolen/damaged on school property in past year	30.2	↓	↑
	Bullied by someone in past month	11.5	–	↑
	Bullied someone in past month	25.6	–	–
	Episodes of sadness or hopelessness almost every day for two or more weeks in a row preventing normal activities	36.6	–	↑
	Attempted suicide in past year	10.0	–	–

Table 7. Summary of Substance Use, Violence-related and Sexual Behaviors, and Factors Related to Substance Use Among Virgin Islands Private High School Students, 2007

Substance/ Behavior	Indicator	Percent/ Value 2007	2006-2007 Change *	Difference 2007 Private vs. Public*
	Attempted suicide resulting in injury in past year	2.3	–	–
Sexual behaviors	Had sex before age 13	11.4	–	↓
	Have ever had sex	47.2	–	↓
	Have had four or more lifetime sexual partners	19.0	–	↓
	Have had sex in the past three months	30.7	–	↓
	Drank or used drugs before having sex	15.2	–	–
	Used a condom before having sex	63.1	↓	–
	Used birth control pills to prevent pregnancy	6.6	↓	–
Factors related to substance use	Student attitudes favorable toward drug use	1.85	↓	–
	Community law enforcement favorable to drug use	3.17	–	–
	Perceived availability of drugs	3.09	–	–
	Parental attitudes favorable to drug use	1.48	↓	↑
	Perceived risk of drug use	3.34	–	↑
	Prosocial involvement (scale 1 – 6)	2.16	–	–
	Effective family management	2.87	–	↑
	School bonding (scale 1 – 5)	3.49	↑	–
	Student antisocial behaviors (past year)			
	Suspended from school	15.8	–	↓
	Carried a handgun	7.8	–	↓
	Sold illegal drugs	10.5	–	–
	Stolen or tried to steal a vehicle	5.5	–	–
	Been arrested	4.2	–	↓
	Attacked someone with the intention of hurting them	23.8	–	↓
	Been drunk or high at school	10.5	–	–
	Taken a handgun to school	2.5	–	–
		Mean # of friends using		
	Peer substance use (past year)			
	Cigarettes	0.35	↓	↑
	Alcohol	1.82	↓	–
	Marijuana	1.15	↓	–
	Other illegal drugs	0.16	–	↑
		(% reporting)		
	Family history of substance use			
	Other adult use/antisocial behavior (past year)	44.6	–	–
	Used marijuana, crack cocaine, or other drugs	52.8	–	–
	Sold or dealt drugs	42.5	–	–
	Done other illegal activities (stealing, selling stolen goods, mugging or assaulting someone)	37.7	–	–
	Truancy (past year, % reporting)	27.7	–	↓
	Grades in school (past year, % reporting mostly A's and B's)	70.5	↓	↑
	Parents talking to with them at least weekly about how they are doing in school	70.2	↓	–
	Religiosity (% attending religious services/activities)	83.9	↑	↑

* ↑ or ↓ indicates change that exceeds the range of measurement uncertainty (i.e., upper or lower confidence limits).

As seen in the table, private school students reported significant changes in the desired direction on substance use and risky behaviors on the following indicators from 2006 to 2007:

- Decreased current alcohol use;
- Decreased driving after drinking alcohol;
- Decreased current cigarette use;
- Decreased daily cigarette use;
- Being in the same room as someone smoking during the last week;
- Deceased lifetime hallucinogen use;
- Decreased property stolen or damaged in school;
- Decreased attitudes favorable to drug use;
- Decreased parental attitudes favorable to drug use;
- Increased school bonding;
- Decreased substance use by peers for alcohol, tobacco, and marijuana; and
- Increased attendance at religious services/activities.

Private school students reported significant changes in the undesired direction on the following:

- Increased not attending school because it felt unsafe;
- Decreased condom use before sex;
- Decreased use of birth control pills before sex;
- Decreased reporting of grades of mostly A's and B's; and
- Parents talking with them about how they are doing in school.

Thus, overall, private school students reported more significant positive changes than negative changes from 2006 to 2007; that said, the changes in sexual practices (i.e., using less birth control before sex) should clearly be cause for concern.

Also shown in the table, private school students differed significantly from public school students on numerous indicators. Indicators for which private school students reported more favorable behaviors, controlling for age, gender, and race (Black or other race), were the following:

- Current alcohol use;
- Early alcohol use;
- Early marijuana use;
- Driving with someone who had been smoking marijuana;
- Current marijuana and fonta use combined;
- Been in a physical fight during the past year;
- Sexual intercourse ever;
- Early sexual intercourse
- Four or more sexual partners during their lifetimes;
- Sexual intercourse in the past three months;
- Parental attitudes favorable to drug use;
- Perceived risk of drug use;

- Effective family management;
- Been suspended from school;
- Carried a handgun;
- Been arrested;
- Attacked someone with the intent of hurting him/her;
- Skipping one or more classes in the past month;
- Receiving mostly A's and B's in school; and
- Attendance at religious services/activities.

Indicators for which private school students reported less favorable behaviors were the following:

- Being in the same room as someone smoking during the last week;
- Lifetime hallucinogen use;
- Had personal property damaged or stolen at school in the past year;
- Been bullied in the past month;
- Being sold or offered illegal drugs at school in the past year;
- Peer use of cigarettes and illicit drugs (other than marijuana); and
- Episodes of sadness or hopelessness almost every day for two or more weeks in a row preventing normal activities.

Thus, overall, private school students report behaviors that are less risky than their public school counterparts. Such differences are not uniform, however, and the notion that private school students are immune to substance use and other risky behaviors is clearly not supported here.

Discussion

Data from the 2006 VI YRBS suggested that Virgin Islands high school students had increased their substance use to near-US mainland levels, after many years of having comparatively low use rates. Data from the 2007 VI YRBS further confirmed these disturbing trends. For the public school students (the vast majority of our sample) we found statistically significant increases in alcohol use, binge drinking, and being a passenger with a drinking driver from 2006 to 2007. On many other substance use variables, we saw increases that did not meet the threshold for statistical significance; nevertheless, even these non-significant increases are cause for concern, given that they are so widespread.

We must note, of course, that these reported increases may be an artifact of changes in survey methodologies in 2006. Prior to 2006, the YRBS was conducted by the VI Department of Education, in conjunction with the US CDC. In 2006 and 2007, the YRBS was conducted jointly by the Division (with SIG funds), the Department of Education, and PIRE. Methodological differences are largely unknown, but may have contributed to the increases in reported substance use. There is reason to believe, however, that such differences were minimal because the VI Department of Education was in control of all YRBS administrations, and there is no indication that they administered the surveys very differently prior to 2006.

We also found statistically significant increases in being suspended from school during the past year and carrying a handgun during the past year—although there was not an increase in carrying a handgun during the past 30 days. Students also reported a significant increase in the number of their peers who use alcohol. There were no statistically significant changes in other violence-related behaviors or other risk and protective factors. Unlike the substance use data, the non-significant changes were not uniformly in one direction. Thus, the disconcerting trends in substance use appear to be less consistent and less pronounced in the areas of violence-related behaviors, and risk and protective factors.

These recent increases in substance in the Virgin Islands are particularly troubling for two reasons. First, as already noted, the increases are a departure from a decade-long trend of lower use rates than the US mainland. For many years, Virgin Islands youth appeared to be protected against high rates of substance use, even though they often were initiated into substance use at an early age and there is widespread availability of alcohol throughout the Territory. (We noted this paradox of high rates of early use but low rates of subsequent use in our 2006 report. Unfortunately, this paradox seems to have disappeared.) But these recent data show a youth population that is more inclined to participate in risky substance use behaviors. This dramatic turn of events should be raising questions among residents of the Territory about why today's young people are turning to substances more so than in the past.

The second reason these trends are so troubling is because Virgin Islands young adults already experience extremely high rates of negative health consequences that may be associated with substance use. For example, data from the recent Virgin Islands Epidemiological Profile indicated that rates of heavy alcohol use by Virgin Islands adults were higher than on the US mainland, and that most of the consequences associated with alcohol and drug use occur at higher rates in the Virgin Islands compared to the US, especially among younger age groups (18-

to 34-year olds), with homicides and fire-arm related death rates five to seven times higher in the VI compared to the US in this age range. HIV/AIDS case rates (all ages) are some of the highest in the US. It is possible that these increases in substance use among high school students will further fuel these negative consequences during the next ten years.

As with the 2006 data, the 2007 subgroup analyses revealed that males and Hispanic students are at higher risk for substance abuse and other risky behaviors. The data also highlight other at-risk groups, depending on the variable of interest. For instance, females are twice as likely as males to suicide attempts. Similarly, younger students appear to be more susceptible to some risky behaviors than older students (e.g., cigarette use and alcohol use on school property). Thus, we encourage prevention providers, policy makers, and other stakeholders to use these data to develop and implement evidence-based prevention practices that meet the needs of all students (universal strategies), as well as those that target particular high risk groups (selective strategies) for any given problem area.

In addition to the high risk behaviors and attitudes reported by students, the data also shed light on several family- and community-related issues that must be addressed. For instance, nearly half of the students reported having a family member with a severe alcohol or drug problem. Students also reported that it is relatively easy to obtain alcohol and illicit substances in their communities and that law enforcement efforts appear to be weak or ineffective. These data indicate that substance use among youth occurs in the larger family and community context. As such, prevention efforts cannot be aimed solely at the students. To prevent and reduce the use of substances by youth in the Virgin Islands, prevention stakeholders must implement evidence-based strategies aimed at the factors that surround youth and that create environments that encourage (or don't discourage) such risky behaviors.

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