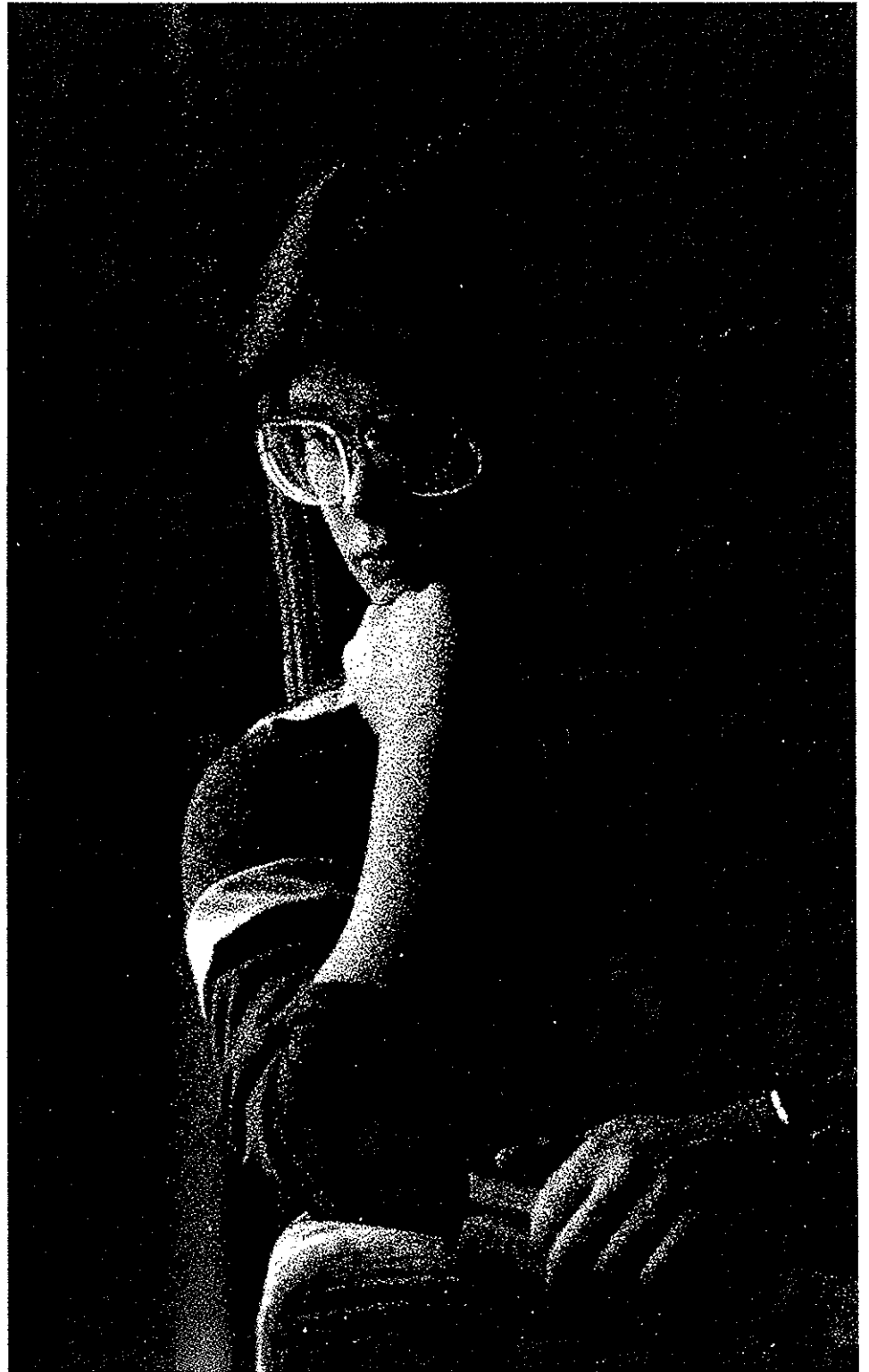


1990

**A STATEWIDE
REPORT ON
SUBSTANCE ABUSE
IN WASHINGTON**

1988-1990



Substance Use Among Public School Students in Washington State 1988-1990

Judith A. Billings
State Superintendent of Public Instruction

Warren Burton
Acting Assistant Superintendent
Curriculum, Student Services and Technology

Barbara Mertens
Director
Student Services

Carol R. Strong
Supervisor
Drug-Free School and Communities Program

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Project Materials were prepared by Dr. Roy M. Gabriel, Ph.D.

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Executive Summary

In the fall of 1990, the Office of the Superintendent of Public Instruction (OSPI) and the Northwest Regional Educational Laboratory (NWREL) collaborated on a study to determine the extent and nature of substance use among public school students in the state of Washington. This survey of alcohol and other drug use was a replication of the survey administered in 1988. Students in sixth, eighth, tenth and twelfth grades in a sample of schools across the state participated in November/December. The statewide results of the 1990 survey of substance use are described in this report.

Approach

NWREL's survey, used throughout the Northwest states since 1986 and in Washington in 1988, was modified slightly for use in this study. The survey included 77 questions on student background, use of legal (e.g., over-the-counter drugs) and illegal substances, attitudes toward use, use among peers, perceptions of parental attitudes, risk factors related to use, and experiences with alcohol and drug education. A shorter version was used with sixth graders.

A stratified cluster sampling plan was developed by NWREL to ensure that results would be representative by region, school size, and rurality. OSPI staff contacted the superintendent and principal of each sample school by mail to ask for their participation in the survey and made a follow-up telephone call if no response was received. If the school did not agree to participate, the next school from the appropriate cell of the sampling plan was contacted. Although a higher number of schools refused to participate than expected, particularly among rural schools, an adequate sample was obtained to complete the study.

The results reported here are based on responses from more than 18,000 students in 176 public schools. All students at the appropriate grade who were in attendance on the day the survey was administered in that school were asked to complete the survey. Students were assured that their participation was entirely voluntary and that their responses would be anonymous. No name or other identifying information was collected.

Completed answer sheets were carefully screened to remove the responses from students who admitted responding dishonestly, who faked high use, or who did not take the survey seriously. The results from each school were weighted to account for variation in school size and to adjust for under- or over-sampling of some cells in the sampling design.

Our screening procedures detect students faking high use (exaggerators) but not those faking low use (minimizers). Also, substance abuse is usually highest among students with high absenteeism, so use is likely to be higher among the students absent when the survey was administered. As a result, the survey findings reported here probably represent an underestimate of substance use by students in Washington. The same conditions existed in the 1988 survey, however, so the estimates of change presented throughout this report are likely less affected by this. In other words, the bias in reporting is probably in equal evidence in both years, and its influence "cancels out" in estimates of change.

Questions of student use of alcohol and drugs include sixteen different substances, from the "gateway drugs" of alcohol, tobacco and over-the-counter drugs to the "hard drugs" of cocaine and heroin. To summarize information across substances, composite scales were developed, based on current research in the area. The Alcohol Use Scale is a summary of the frequency of drinking and the quantity usually consumed when drinking. The Drug Use Scale is based on the

addictiveness of the drug, frequency of use, and number of different drugs used. The Risk Scale is based in part upon the research of David Hawkins at the University of Washington and others, who identified factors related to abuse of alcohol and drugs. Factors such as friends' use, alcohol or drug problems among friends or family, and perceptions of risk are included in this scale.

Lifetime Prevalence of Use

Results of this survey indicate that there is *substantial decline* in experimentation with alcohol and drugs among students enrolled in Washington's public schools since 1988.

These declines are most dramatic at sixth grade. Lifetime prevalence (i.e., percent of students who have ever tried a drug) allows us to examine when students begin to experiment with alcohol and other drugs.

Some of the highlights include:

- o As in 1988, alcohol is by far the substance of choice for students at all grades. Beer and wine are preferred over hard liquor, but some form of alcohol has been tried by 33 percent of the sixth graders (down from 51% of 1988 sixth graders), 60 percent of the eighth graders, 76 percent of the tenth graders and 83 percent of the twelfth graders.
- o The percent of students who have tried illicit drugs has declined at all grades since 1988. In the current survey, about one in every ten sixth grade students has tried some illicit drug at least once (as compared to one in six in 1988). The percent of students having tried some illicit drug at least once was 24 in eighth grade, 34 in tenth grade and 41 among high school seniors.
- o Compared to a national sample of twelfth graders, fewer of Washington's high school seniors report having tried alcohol (90% vs. 83%) or drugs (48% vs. 41%).

Regular Use

While often cited in national statistics, lifetime prevalence tends to mask differences in levels of use and does not distinguish current users from those who are no longer using drugs. The 1990 results on current use rates are not as universally positive as those for lifetime prevalence cited above. Regular use is defined as use of a substance at least six times in the past year.

Specifically:

- o While regular use of alcohol has declined slightly since 1988, it still increases dramatically by grade. Approximately 3 percent at sixth grade, 16 percent at eighth grade, 37 percent at tenth grade and 53 percent at twelfth grade report moderate to high use of alcohol.
- o Along with fewer students drinking, indicators of drinking behavior have improved since 1988. The onset of use is later and quantities usually consumed and incidence of binge drinking have declined slightly at all grades. Still, when asked how many times they consumed five or more drinks at one sitting in the past two weeks ("binge drinking"), 13 percent of the eighth graders, 20 percent of the tenth graders and 28 percent of the high school seniors reported they had done this at least once.

- o Regular use of illicit drugs has declined sharply at grades 6 and 10, but has not changed at grade 8. At each grade, more students have progressed to higher levels of drug use. Less than 3 percent at sixth grade, nearly 9 percent at eighth grade, 14 percent at tenth grade and almost 20 percent of high school seniors reported moderate to high use of illicit drugs.
- o In 1990, a larger proportion of eighth grade students report regular use of tobacco and inhalants than their counterparts in 1988.

Substance Abuse

Students who have already reached a high level of alcohol or drug use require special attention. Substance abuse is defined as daily use of gateway substances (e.g., alcohol, marijuana, inhalants) or at least monthly use of the more powerful substances (e.g., cocaine, heroin). These students are at greatest risk of experiencing addiction or other health and safety problems. Schools must implement intervention strategies to reduce or stop substance use by these students.

- o While slight declines in heavy use of alcohol are in evidence at grades six and ten, a higher proportion of eighth graders report heavy drinking than in 1988. Nearly 7 percent of the eighth graders report **high** use of alcohol and by twelfth grade almost 24 percent of the students report **high** use.
- o A substantial decline in the proportion of tenth graders (6.7% to 4.5%), but increase among eighth graders (3.4% to 4.2%), reporting high drug use is in evidence. Eighth grade use has nearly caught up with tenth grade use in 1990.
- o A conservative estimate of over 45,000 Washington students (over 11%) in grades six through twelve can be considered heavy drinkers. While this is lower than the corresponding estimate in 1988, it still exposes a serious problem for Washington's schools and communities.
- o A conservative estimate of over 16,000 Washington students (over 4%) in grades six through twelve can be considered heavy drug users. Again, this figure is lower than that reported in 1988, but still unacceptably high.

Patterns of Use

The aggregate results presented above do not portray differences among students of varying characteristics or across different locations in Washington. A few of the more interesting findings are:

- o Although there are only slight sex differences in alcohol use before tenth grade, high school boys are nearly twice as likely as girls to drink heavily. Among high school seniors, 38 percent of the boys report usually drinking five or more drinks when they drink, while only 16 percent of the girls report the same quantity.
- o There are fewer sex differences in illicit drug use. There is little difference in the percent of boys and girls who have ever tried these substances at any grade. Twelfth grade boys are somewhat more likely than girls to engage in heavy drug use.

- o Students with different ethnic backgrounds report varying patterns of alcohol and drug use. In 1990, Asian students are consistently the lowest users of alcohol and drugs, usually less than half that reported by the other four ethnic groups. Differences among Blacks, Hispanics, Native Americans and Whites tend to diminish at higher grade levels.
- o Ethnic differences have changed since 1988. Significant declines in moderate to high alcohol and drug use for both Native American and White students are in evidence at tenth grade. At this grade, Hispanic students show marked increase in alcohol use, and a greater percentage of Black students report moderate to high use of illicit drugs.
- o There were no consistent differences between rural and non-rural schools nor between schools and students from different regions across the state.

Factors Related to Use

Some items in the survey probed factors that are related to alcohol and other drug use such as peer influences, exposure to drugs, perceptions of risk, and access to drugs.

- o Peer influence has been found to be a major factor in initiating and maintaining use. Opportunities to use alcohol and drugs through peer contact have not decreased since 1988. Comparable percentages of students at all grades report having friends that use, attend parties where alcohol and drugs are available, and observe substance use at school during the school day.
- o Students who are active in extra-curricular or after school activities are somewhat less likely to report moderate to high alcohol or drug use than students who do not participate in any activities. This is not the case for participation on athletic teams, however, where increased participation is associated with the same or greater alcohol or drug use.
- o Students who anticipate going to college are much less likely to report moderate to high levels of drug use than those who do not plan to attend. A similar relationship, but not as strong, was also observed for alcohol.
- o The vast majority of students (75 to 85 percent) at all grades tend to perceive their parents as disapproving of smoking marijuana or drinking heavily, but more tolerant of attending parties where alcohol is served (45 to 60 percent). Students' perceptions of their parents' disapproval are up slightly from 1988.
- o Far fewer students recognize the risks of binge drinking than smoking cigarettes, marijuana, or using other drugs; but they do recognize the risks of sharing needles. With the exception of occasionally smoking marijuana, the perception of risk of all of these behaviors *increases* by grade.
- o Although few sixth graders would find it easy to obtain marijuana (16%), most tenth (67%) and twelfth (76%) graders report that it would be easy to get marijuana and, to a lesser extent, cocaine (34 % and 42%). Although these figures are slightly lower than in 1988, high school students have little problem with access to illicit drugs.

Experience with Drug Education

The use of alcohol and other drugs by adolescents is not just a school problem--it involves the entire community. Still, schools must play an active role in helping to deal with substance abuse through strong policies, comprehensive alcohol and drug education, and student assistance services.

This survey documented student perceptions of the alcohol and drug education they have received and the student assistance opportunities available to them. Students in Washington are quite positive about the education they have received:

- o School is the primary source of information about alcohol and drugs for the majority of students at all grades. The percent of students citing it as the major influence has risen since 1988 at each grade. Concurrently, the influence of popular media has *declined*, while that of their families has remained constant.
- o Most Washington students feel that drug education should begin in elementary school. The highest proportion of students at each grade (40 percent or more) suggest third grade or earlier.
- o Most students feel they have learned some or a lot about each of the major components of a good prevention curriculum: information about drugs and their effects, refusal skills, decision making, self esteem, and healthy alternative activities.
- o As in 1988, students who reported that they learned a lot from drug education were much less likely to engage in moderate to high use of alcohol or drugs.
- o As in 1988, most students in grades eight, ten and twelve report that their school offers a counselor or other staff with whom they could discuss a drug or alcohol problem. Far fewer students are aware of student support groups at these grades, but the presence of peer assistance services are more widely known. A substantial proportion of students indicated they did not know if these support services existed in their schools.

Conclusions

The results of this survey confirm that, while substantial progress has been made since 1988, a serious problem still exists with substance use and abuse among public school students in Washington. This widespread problem is not confined to any particular region or group of students.

Opportunities for students to experiment with or use alcohol and drugs are every bit as available now as they were two years ago. However, perceptions of risk and parental disapproval are slightly higher in 1990.

The decline in alcohol and drug use rates is perhaps most encouraging at the earliest grade surveyed: grade six. These improvements take on even greater significance in light of the research that has shown that delaying the onset of experimentation is associated with fewer problems in later adolescence.

Introduction and Approach

In 1988, the Superintendent of Public Instruction and the Substance Abuse Educational Advisory Committee determined that an assessment of student use of drugs and alcohol would aid in understanding both the nature and extent of substance use and abuse in Washington. The Superintendent contracted with the Northwest Regional Educational Laboratory (NWREL) to help conduct a student survey at three grade levels: 6, 8 and 10. That survey provided a baseline against which the impact of statewide prevention and intervention could be assessed. In 1990, the Superintendent again contracted with NWREL for a replication of the statewide survey, to be conducted at grades six, eight, ten and twelve. This report details the findings of that survey.

The objectives of this study were:

1. To obtain empirical needs assessment data necessary for program planning; and
2. To study trends of student substance use and abuse in participating schools and the state.

The Student Alcohol and Drug Use Survey was developed by NWREL staff. The survey has evolved through reviews by district and state advisory committees throughout the northwest states. In addition to questions on student use of various substances, the survey includes items tapping student demographics, risk factors predicting future use, perceived harmfulness of certain drugs, perceived parent attitudes toward use, estimates of friends' use and questions concerning alcohol and drug education.

The analysis of results includes the formulation of three composite scales indicating the extent of students' alcohol use, drug use and risk of future problems with alcohol or other drugs. These scales attempt to simplify interpretation, summarizing the many substances and forms of use contained in the specific items on the survey. Much technical study has gone into the development and validation of these scales. It is detailed in Appendix B of this report.

Results presented in this report are based on the sample of over 18,000 students participating in the 1990 survey. While this is fewer than ten percent of the statewide enrollment at grades six, eight, ten and twelve, the scientific sampling plan used assures accurate representation of the state population at these grades. Statistical weighting procedures are used to rectify any misrepresentations due to schools not participating in the survey. Even with these, specific subgroups within the state are not always represented perfectly (e.g., eighth grade students from rural schools within a specific region). When this occurs, caution is noted in the interpretations in the Findings of this report. Details of the sampling plan and weighting procedures are given in Appendix B.

The inevitable question asked of alcohol and drug survey results is "how do you know the students are telling the truth?" It's a question that all quality surveys in this area attempt to address (Gabriel, Pollard & Arter, 1990). Perhaps the most important step to take is in the administration of the survey itself. NWREL sent explicit instructions to each participating school, describing the directions for administration to ensure anonymity and confidentiality of the results. Once the survey has been completed and the data are being processed, several statistical checks are made to detect inconsistent or obviously dishonest responses and these surveys are discarded. As in 1988, fewer than five percent of the student surveys met these stringent criteria. Again, these procedures are detailed in Appendix B of this report.

Findings

This section describes the major findings from the November-December 1990 survey of Washington public school students in grades six, eight, ten and twelve. The responses to each item of the survey are listed by grade in Appendix A. In general, the true value for a statewide group will be within one percentage point of the observed percents displayed in this report and listed in Appendix A.

The findings are organized under six topics: the lifetime prevalence of alcohol and other drug use; the regular use of substances; the prevalence of substance abuse; patterns of use by gender, region, and other student characteristics; factors associated with use; and experiences with alcohol and drug education.

Lifetime Prevalence of Use

Finding: Fewer Washington students report having ever tried alcohol or drugs than in 1988. This decline is most dramatic at grade 6.

In *Schools Without Drugs*, the U.S. Education Department argues for a clear, strong "no use" message for all drugs including alcohol. Enforcement and treatment approaches have not proven to be very effective in eliminating substance abuse. The chance of breaking the grip of substance abuse is greatest if the onset of use can be delayed as long as possible.

In Table 1, the percent of students at each grade indicating they had ever tried any illicit drug, any alcohol and each of sixteen substances is given. The table also provides a comparison between the results obtained in 1988 (Deck & Nickel, 1989) with those obtained in 1990 with the nearly identical survey. The change in lifetime prevalence was computed unless there was a meaningful change in the wording of the item in 1990. For example, in 1988, students reported their use of "over-the-counter" drugs such as Dexatrim, diet pills, etc. In 1990, this item was changed to ask their use of "drugs purchased from the drug store to get high such as diet pills, stay-awake drugs...". The added phrase indicating the purpose "to get high" may have caused fewer students to report their use than in 1988.

The changes in lifetime prevalence are most pronounced at grade 6. Major reductions in the percent of sixth graders who have ever tried the gateway drugs of alcohol, marijuana or inhalants are shown in Table 1. These data show that some forty percent fewer sixth graders in 1990 had experimented with these substances than had their counterparts in 1988. The reduction at this early grade level is of major importance, given the clearly established relationship between early onset of alcohol and other drug use and later problems with substance abuse. Delaying the onset of experimentation has become one of the important goals of prevention.

The declines at higher grade levels are less dramatic, but some of that may be due to the insensitivity of this indicator (lifetime prevalence) beyond the early experimental years. Even with this, however, the percent of students having ever tried alcohol is clearly less at all grades in 1990 than in 1988.

Table 1. Prevalence of Use in Lifetime
(Percent Ever Used) by Grade and Year

Substance	Grade 6			Grade 8			Grade 10			Grade 12 ¹		
	88	90	Change	88	90	Change	88	90	Change	90 USA	90 WA	Difference
Any Illicit Drug	17	9.7	-7.3	26.9	23.8	-3.1	44.1	33.5	-7.6	47.9	41	-6.9
Any Alcohol	51.4	33	-18.4	68.9	60.2	-8.7	84.1	75.7	-8.4	89.5	83	-6.5
Smoking Tobacco	12.4	11.3	-1.1	29.8	32.5	+2.7	43.1	43.4	+3	64.4	51.7	-12.7
Chewing Tobacco	9.5	5.4	-4.1	16.6	13.9	-2.7	21.5	22.1	+6	NA	28.5	
Beer	38.5	23.4	-15.1	56.5	48.5	-8.0	71.6	65.3	-6.3	NA	75.3	
Wine (cooler)	39.9	25.0	-14.9	60.0	53.2	-6.8	77.6	68.6	-9.0	NA	76.3	
Hard liquor	14.2	8.4	-5.8	34.3	31.5	-2.8	56.8	53.5	-3.3	NA	66.1	
Marijuana	3.6	1.7	-1.9	14.4	11.2	-3.2	32.7	21.5	-11.2	40.7	34.0	-6.7
Cocaine (crack)	0.8	.9	+1	2.8	3.4	+6	8.1	4.3	-3.8	9.4	7.8	-1.6
Opiates	2.5	1.4	-1.1	3.3	3.8	+5	7.1	6.5	-6	8.3	7.6	-.7
Depressants	1.1	.8	-.3	4.5	4.6	+1	6.5	5.2	-1.3	NA	4.7	
Tranquilizers	1.9	.7	-1.2	3.4	3.7	+3	6.4	5.5	-.9	7.2	5.1	-2.1
Hallucinogens	1.5	.8	-.7	4.1	5.7	+1.6	12.1	9.1	-3.0	9.4	13.7	+4.3
Inhalants	13.0	7.5	-5.5	17.3	17.1	-.2	19.5	17.7	-1.8	18.0	16.4	-1.6
Stimulants ²		1.8			8.8			13.0		NA	17.4	
Steroids	1.7	1.2	-.5	3.3	2.7	-.6	4.9	3.0	-1.9	2.9	3.2	+3
Over-the-counter ²		7.0			13.8			23.2		NA	27.2	
Crystal Meth. ²		.9			3.0			3.1	1	2.7	4.3	+1.6

NOTE: Change values in bold are those representing statistically significant differences between 1988 and 1990.

¹ Grade 12 was not included in the 1988 survey. National data, from the 1990 *Monitoring the Future* survey of high school seniors are included here for interpretive purposes.

² Comparative data for 1988 not printed due to substantially different wording of the item.

Since only grades 6, 8 and 10 participated in the survey in 1988, changes over time can be interpreted at these grades only in this report. Grade 12 results, however, can be compared with those of the 1990 NIDA-sponsored national high school senior survey (Johnston, Bachman & O'Malley, 1991), and these results appear in the column headed "USA" in Table 1. Unfortunately, reasonably current nationally representative data on student AOD use exists only at this grade level, so comparisons between Washington's students' use with those across the nation can be made only at the twelfth grade level.

Changes or differences in lifetime prevalence in Table 1 which reach the criterion of statistical significance are printed in larger, bold type. Although this criterion varies somewhat with the size of the percentage in question and the sample size at the particular grade level, a one percent difference is approximately the size of the discrepancy needed in this survey to be deemed statistically significant. The important implication for interpretation is that differences of less than one percent may be within sampling error and not reflective of real differences in the population of Washington's students. Although they are listed in Table 1, changes such as .7% or -.3% ought to be considered essentially zero.

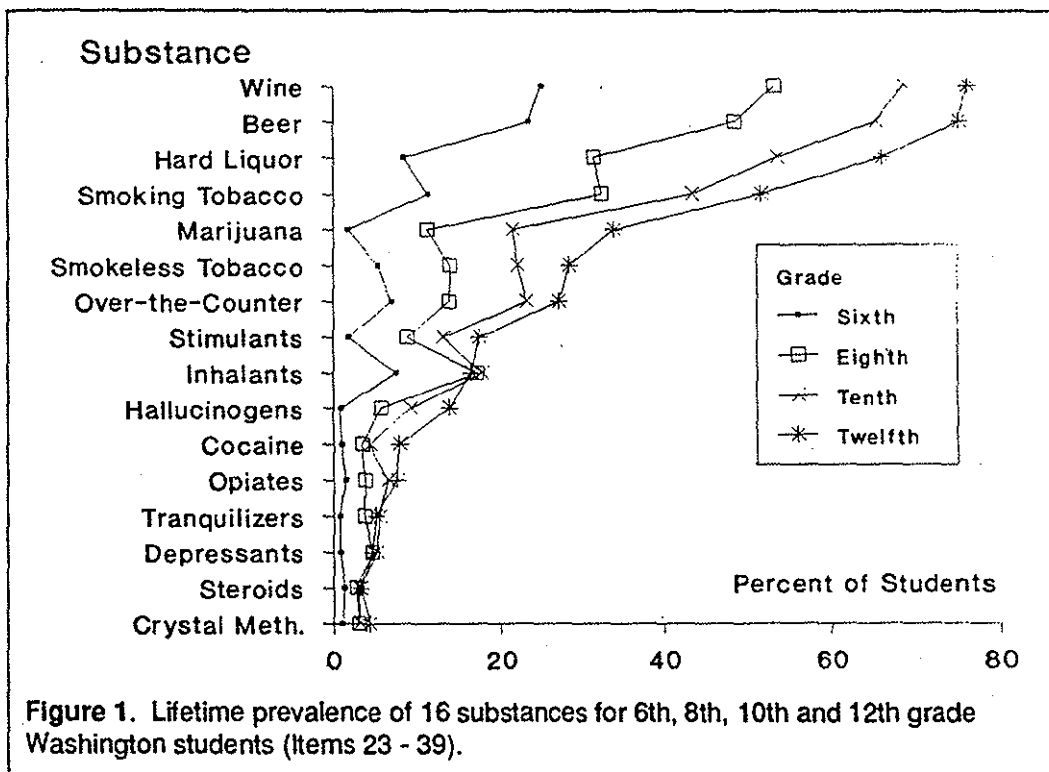
Students were asked how often they had used several substances. Choices included never, seldom, monthly, weekly, and daily. The lifetime prevalence of substance use was determined from the total percent of students reporting seldom, monthly, weekly and daily use, or conversely, 100 minus the percent never using. Similarly, *low to high* use on the Alcohol Use and Drug Use scales may be used to determine the lifetime prevalence of any form of alcohol or illicit drugs.

Lifetime prevalence, while a commonly cited statistic at the national level, is not a particularly useful indicator of current use levels of Washington's students. It is a measure of the percent of students who have *ever tried*, even once in their lives, the substance in question. Obviously, once a student tries a substance, he/she is forever considered a "user" in the lifetime prevalence sense. Particularly since, with this report, Washington is in the position of examining trends in use over time, lifetime prevalence is of limited value.

Finding: *As in 1988, alcohol continues to be the substance of choice for students at all grades.*

Figure 1 presents the lifetime prevalence (i.e., the percent of students ever having tried the drug) of several categories of substances by grade level. The percentages are also given in Table 1. The figure clearly shows that students at all three grade levels reported greater use of wine, beer and hard liquor than all other substances. By sixth grade about one in four students have tried beer (23%) or wine (25%) and by twelfth grade this rate has tripled--three out of four have tried beer (75%) or wine (76%).

Since some students use more than one form of alcohol, the Alcohol Use scale was used to determine the overall frequency and quantity of beer, wine or hard liquor consumed. Some form of alcohol has been tried by 33 percent of the sixth graders, 60 percent of the eighth graders, 76 percent of the tenth graders and 83 percent of the twelfth graders.

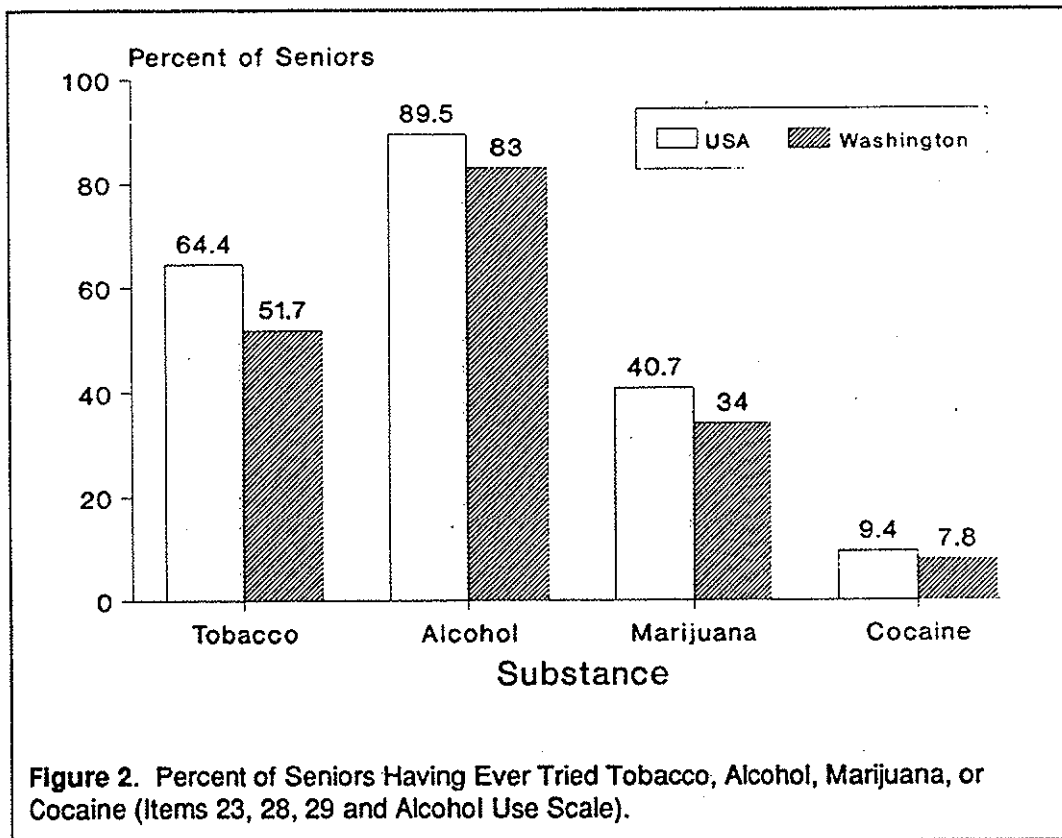


Finding: Compared to a national sample, substantially fewer of Washington's high school seniors report having ever tried tobacco, alcohol, marijuana or cocaine.

Fewer Washington high school seniors report having ever tried tobacco, alcohol, marijuana or cocaine than their twelfth grade peers across the nation. More Washington seniors have tried hallucinogens and crystal methamphetamines than their nationwide peers, however. These comparisons are possible through use of the annual NIDA-sponsored *Monitoring the Future* survey conducted by researchers at the University of Michigan (Johnston, Bachman & O'Malley, 1991). Many of the items in the Student Alcohol and Drug Use survey were based on items from this survey to ensure these comparisons would be possible.

In the last several years, the national senior survey has shown a steady nationwide decline in both lifetime prevalence and more current use of most substances. Unfortunately, 1990 was the first year Washington's high school seniors participated in the statewide survey so that the national and statewide trends over time cannot yet be compared.

Comparison of Washington's and the nation's trends over time cannot be examined at other grades because no recent nationally representative data exist at grades lower than grade twelve. The *National Adolescent School Health Survey* (National Institute on Drug Abuse, 1988) was conducted on a national sample at grades eight and ten in 1987, but these data are clearly not recent enough, given the steady national decline in grade twelve reported above, to provide useful comparison with 1990 data in Washington at these grade levels.



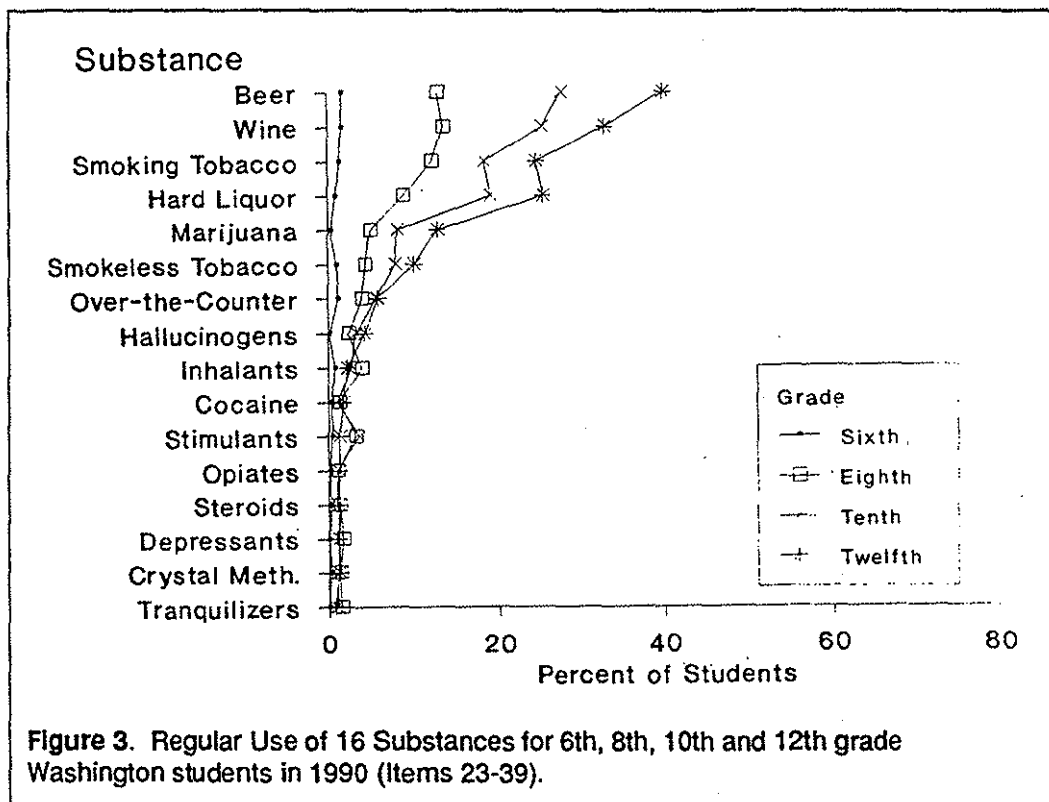
Regular Use

Lifetime prevalence is an important indicator of the initiation of use but other indicators are needed to explore the level of use and the frequency of use. Current use that goes beyond experimentation may be examined for each substance by determining the percent who report using a substance six or more times in the last year summing the responses for *monthly*, *weekly*, and *daily* use on the survey.

Since a student may use more than one drug, it is helpful to determine regular use across all forms of alcohol and across all illicit drugs, combining the *moderate* and *high* levels of the Alcohol Use and Drug Use scales. The derivation of the use levels is discussed in the Technical Approach under Development of Special Scales in Appendix B of this report.

Figure 3 charts the percent of students reporting using each substance at least six times in the last year. These percentages are presented in Table 2.

The pattern for regular use of substances is very similar to that of lifetime prevalence, but the overall prevalence is much reduced. More students report use of beer, wine, and hard liquor than other drugs. Many students also report using smoking tobacco and over-the-counter drugs.



Finding: Regular use of alcohol has declined at grades 6, 8 and 10 since 1988. Regular use of marijuana and cocaine have also decreased at grade 10.

When regular use (i.e., at least six times in the past year) patterns are examined, fewer changes are noted. Regular alcohol use is clearly down since 1988, but marijuana and cocaine use have declined only at grade ten. As shown in Table 2, the regular use of most substances has changed very little since 1988.

Table 2. Use of Substances at Least Six Times in the Past Year, by Grade and Year

Substance	Grade 6			Grade 8			Grade 10			Grade 12 ¹		
	88	90	Change	88	90	Change	88	90	Change	90 USA	90 WA	Difference
Smoking Tobacco	2.1	1.4	-7	10.3	12.2	+1.9	17.6	18.3	+7	29.4	24.5	-4.9
Chewing Tobacco	0.8	1.0	+2	3.5	4.4	+9	5.9	7.9	+2.0	NA	10.1	
Beer	3.1	1.7	-1.4	14.1	12.9	-1.2	28.5	27.6	-9	NA	39.9	
Wine (cooler)	3.2	1.6	-1.6	14.6	13.0	-1.6	27.1	25.2	-1.9	NA	32.8	
Hard liquor	1.1	.9	-2	8.8	8.9	+1	17.9	19.1	+1.2	NA	25.4	
Marijuana	0.5	.3	-2	5.4	5.0	-4	12.3	8.1	-4.2	14.0	12.8	-1.2
Cocaine (crack)	.3	.4	+1	.9	1.3	+4	3.0	1.1	-1.9	1.9	1.8	-.1
Opiates	.2	.2	0	.8	1.1	+3	1.0	1.1	.1	1.5	1.3	-.2
Depressants	.1	.1	0	1.0	1.7	+7	1.6	1.2	-4	NA	1.2	
Tranquilizers	.2	0	-2	.7	1.5	+8	1.1	1.1	0	1.2	.8	-.4
Hallucinogens	.3	.2	-1	1.5	2.4	+9	3.8	3.2	-6	2.2	4.3	+2.1
Inhalants	.3	.8	+5	1.9	3.9	+2.0	2.2	2.7	+5	2.7	2.2	-5
Stimulants ²		.5			3.2			3.6			1.3	
Steroids	.4	.3	-1	1.4	1.3	-1	2.4	1.1	-1.3	1.0	1.3	+3
Over-the-counter ²		1.2			4.0			5.7		NA	5.9	
Crystal Meth. ²		.3			1.3			1.1		1.3	1.2	-.1

NOTE: Change values in **bold** are those representing statistically significant differences between 1988 and 1990.

¹ Grade 12 was not included in the 1988 survey. National data, from the 1990 *Monitoring the Future* survey of high school seniors are included here for interpretive purposes.

² Comparative data for 1988 not printed due to substantially different wording of the item.

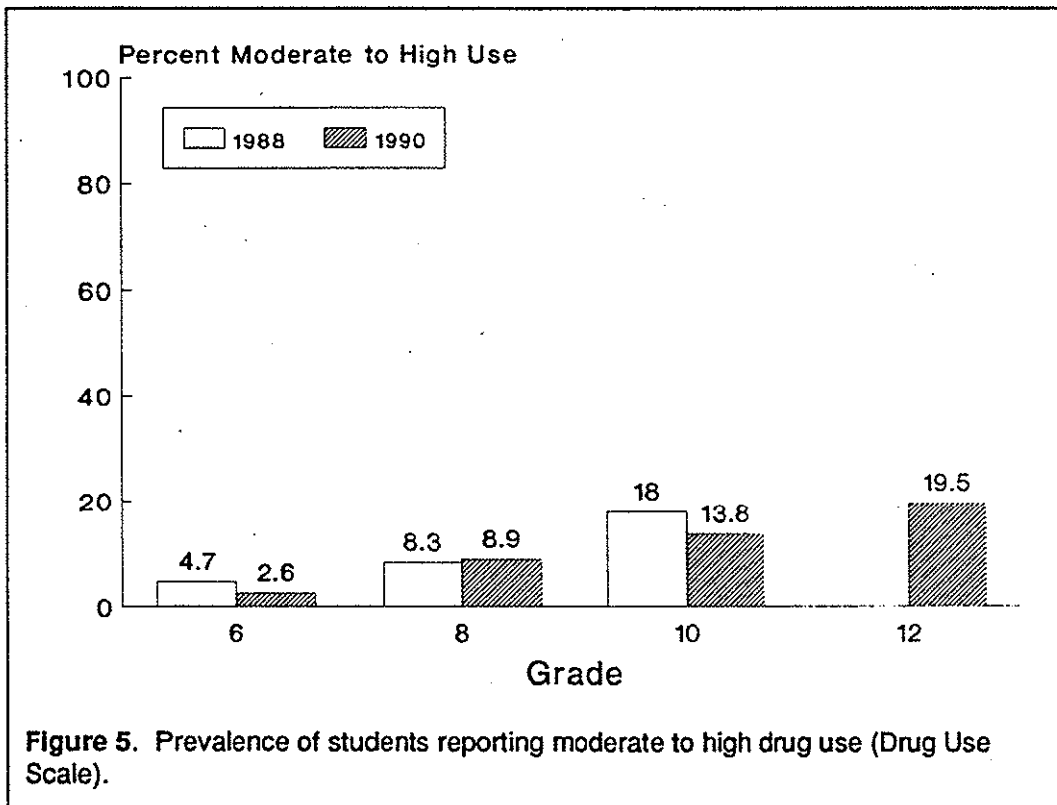
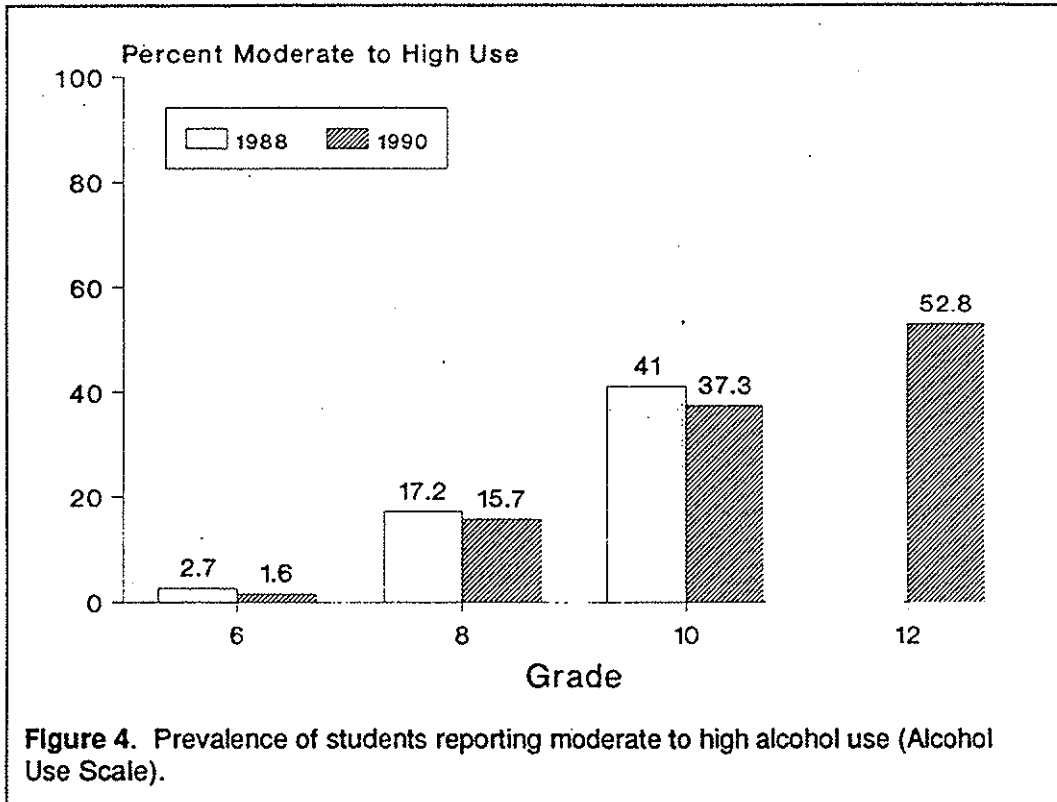
Finding: Regular use of tobacco and inhalants has increased among Washington's eighth graders since 1988.

The regular use of many substances has increased among eighth graders since 1988, although the changes are typically rather low, so it is difficult to be certain about these trends. Exceptions to this are the increased rates for smoking tobacco and inhalants. The rate of inhalant use by these eighth graders may relate to the extremely high lifetime prevalence of this substance in 1988 when they were sixth graders (13%, see Table 1). As gateway drugs, their regular use may portend future use of the harder substances for this group of students. Tenth graders actually report less regular use of inhalants than eighth graders, probably since they have more access to marijuana and other illicit drugs.

Finding: Moderate to high use of alcohol has declined at all grades since 1988. Drug use has also declined, with the exception of grade 8.

As in 1988, Figure 4 shows a clear progression across grades toward higher levels of alcohol use. Nearly 2 percent at sixth grade, 16 percent at eighth grade, 37 percent at tenth grade and 53 percent at twelfth grade report moderate to high use of alcohol. The encouraging sign here is that each of these proportions is smaller than the corresponding totals in 1988 (again, grade 12 students were not included in the 1988 survey). This improvement may be most significant at grade six. The 1.1% reduction shown in Figure 4 represents a 40% decline in the percent of sixth graders using alcohol regularly. With the importance of delayed onset of substance use so clearly established in the literature, the significant reductions at the sixth grade level hold promise for the future of these students.

At each grade, more students have also progressed to higher levels of drug use. As shown in Figure 5, less than 3 percent at sixth grade, nearly 9 percent at eighth grade, almost 14 percent at tenth grade and nearly 20 percent at twelfth grade reported moderate to high use of illicit drugs. These proportions represent substantial declines from those in 1988 at grades six and ten, but not among eighth graders. While the slight increase at this grade may be within the sampling error of the survey, it is in clear contrast to the marked improvements at the other grade levels.



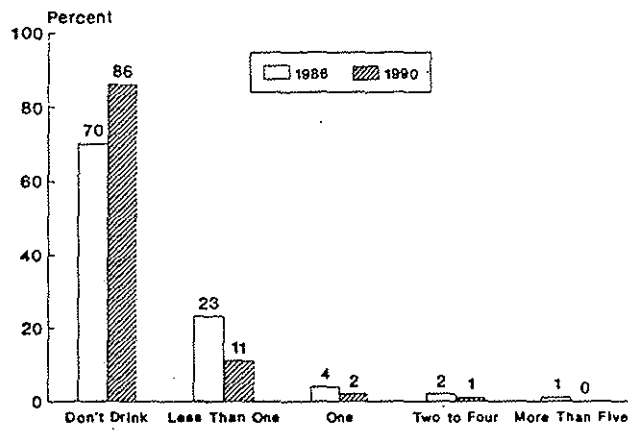


Figure 6a. Quantity of Alcohol Usually Consumed (Item 50) - Grade 6

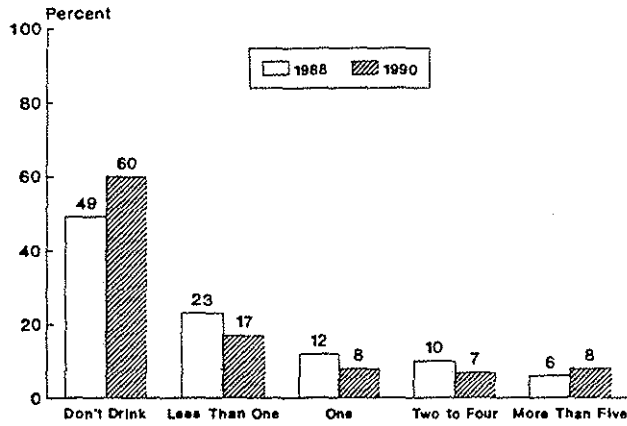


Figure 6b. Quantity of Alcohol Usually Consumed (Item 50) - Grade 8

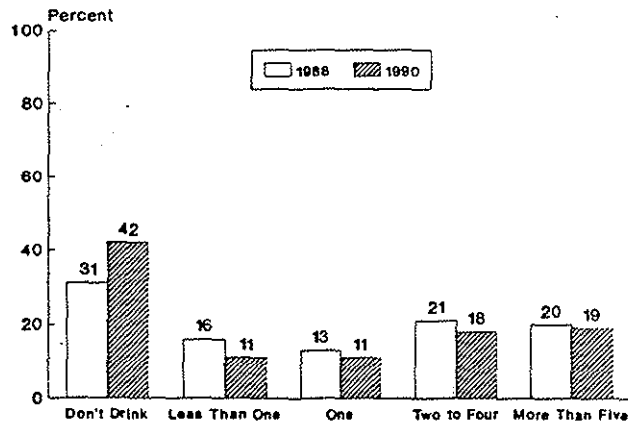


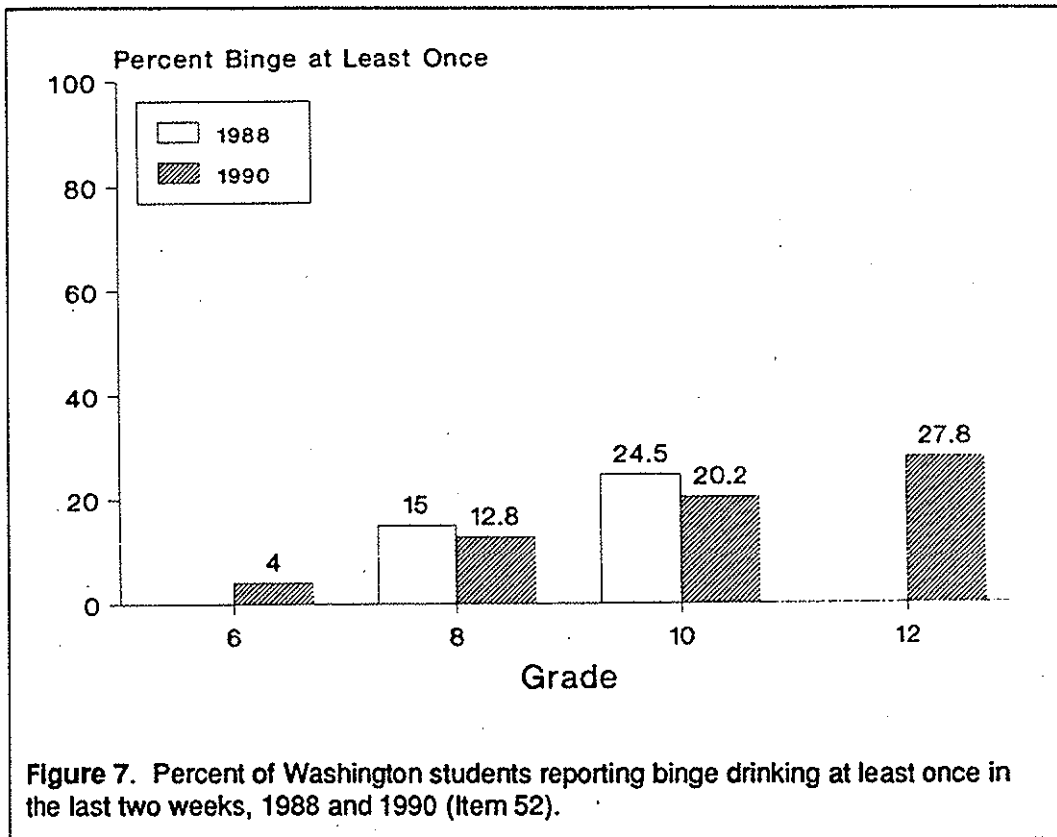
Figure 6c. Quantity of Alcohol Usually Consumed (Item 50) - Grade 10

Finding: Along with the decline in alcohol use, drinking behavior has also changed substantially since 1988. Students at all grades report consuming less when they drink, and the incidence of binge drinking has declined.

To describe changes in drinking behavior more fully, items asking about the quantity usually consumed, frequency of binge drinking, tolerance to alcohol, and age of first drink were examined. The health and safety risks of alcohol use depend as much on these factors as the frequency of drinking.

The incidence of drinking has clearly declined since 1988--far higher proportions of students at each grade indicate they "don't drink." Further, those that do drink report consuming lower quantities than their counterparts in 1988 as shown in Figure 6. The highest quantities of drinking have changed the least over that time period, however.

To get a better look at these higher quantities of use, the incidence of "binge drinking"--consuming five or more drinks at a single sitting--is displayed in Figure 7. The declines at grades eight and ten since 1988 represent important improvements for Washington's students--binge drinking is an extremely hazardous form of substance use, particularly when combined with driving. Fewer of Washington's high school seniors (27.8%) engage in binge drinking than their counterparts across the nation. *Monitoring the Future* results indicate that nearly one third (32.3%) of the high school seniors have had five or more drinks in a row in the past two weeks.



Finding: The onset of alcohol use has been delayed substantially since 1988 at all grades.

Students were asked when they had their first full drink of an alcoholic beverage including a can of beer, a glass of wine, or a mixed drink. Figure 8 shows the percentages by grade of the age at which students remember their first full drink.

By the age of ten about one in six students have tried their first full drink of alcohol and by the age of twelve, one in five have tried a full drink. Again, these figures represent improvement over the results in 1988. Since early onset of use is one of the strongest predictors of abuse later in life, this improvement is an important achievement for schools, communities and families in Washington.

Although slightly fewer tenth graders than sixth or eighth graders report early initiation of alcohol use, it is not clear whether this indicates that today's elementary students start drinking earlier or that older students tend to forget how young they actually were when they started.

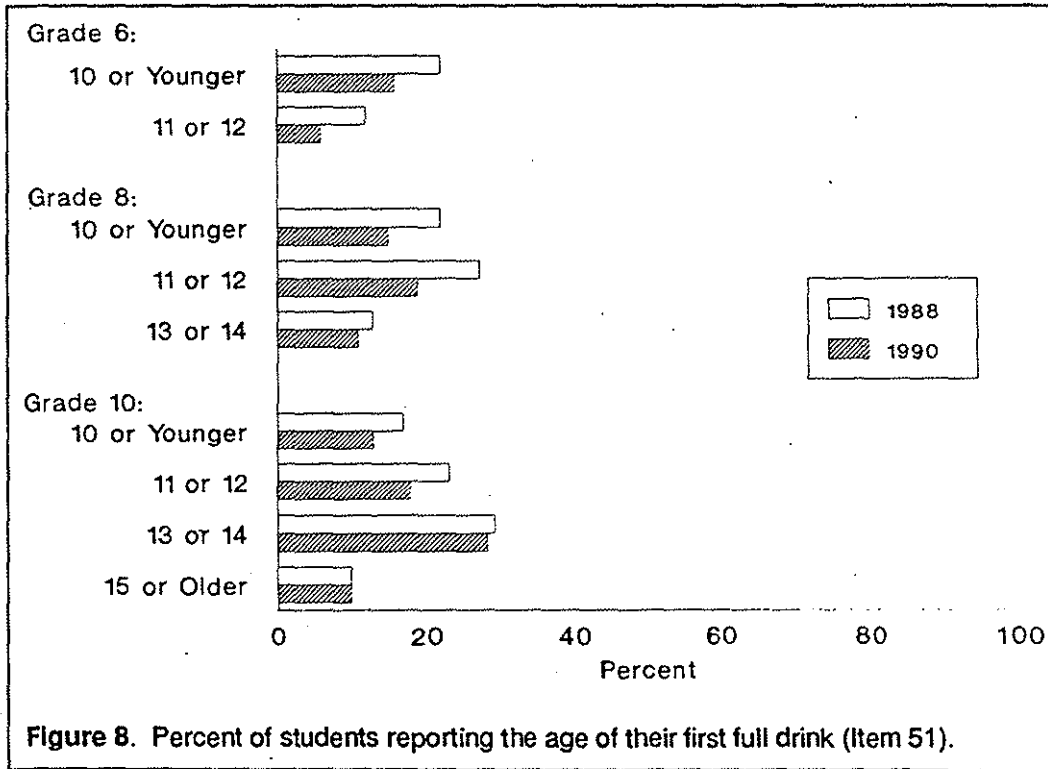


Figure 8. Percent of students reporting the age of their first full drink (Item 51).

Substance Abuse

Students who have already reached a high level of alcohol or drug use require special attention. These students are at greatest risk of experiencing addiction or other health and safety problems from their substance abuse. Typical prevention programs are ineffective with students that have reached this level of use. Schools must implement early intervention strategies to reduce or stop substance use by these students.

Specific criteria as to what level of use constitutes abuse for any particular drug are lacking. For the purposes of this study, *high use* on the Alcohol Use or Drug Use scales will be considered abuse. The decision rules for placing students on these scales were derived based on the literature and review by advisory committees as discussed in the Technical Approach Appendix B of this report.

Finding: Alcohol abuse continues to be a problem among Washington's students. Although slight declines in heavy use occurred at grades six and ten, a higher proportion of eighth graders drank heavily in 1990 than in 1988. A conservative estimate is that more than 45,000 students in grades six through twelve are heavy drinkers.

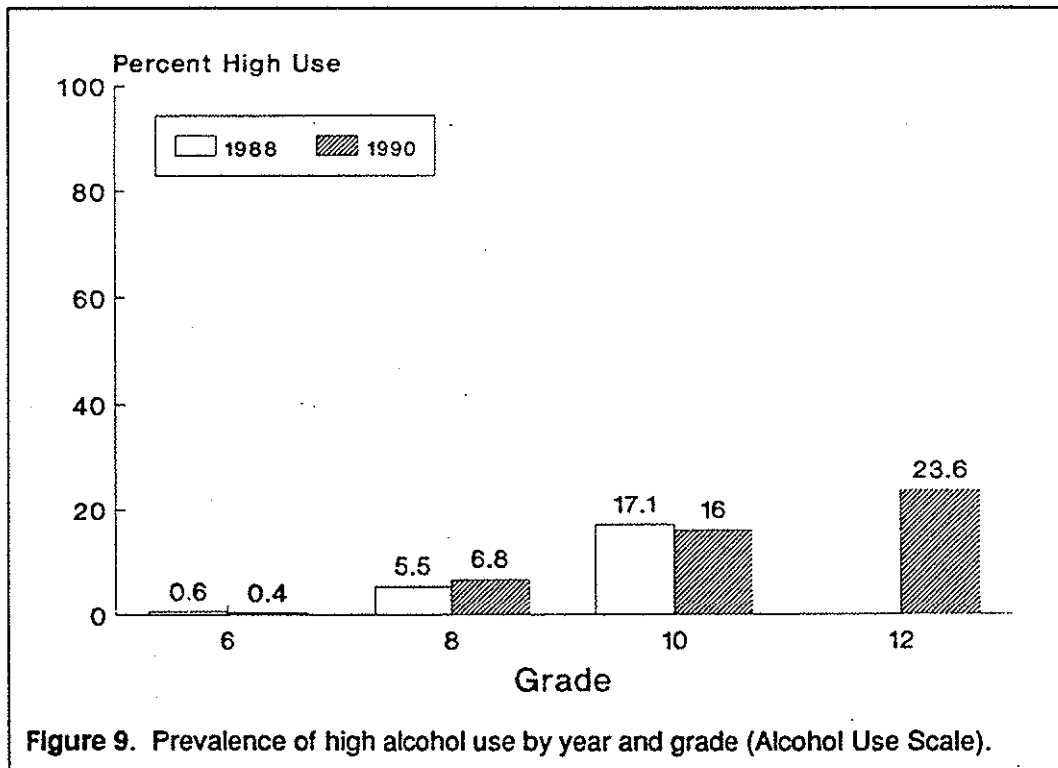


Figure 9 above shows that at each grade more students have reached a high level of alcohol use. At sixth grade less than 1 percent and at eighth grade nearly 7 percent are drinking daily or binge drinking weekly, but by tenth grade one in six (16%) and by twelfth grade one in four (24%) report

high use. Although these represent slight improvements over the 1988 figures (except at grade 8), they still highlight a serious problem among Washington youth.

The number of students statewide that are heavy drinkers can be estimated from the percent of students with high alcohol use at grades six, eight, ten and twelve. The estimated rates for grades seven, nine and eleven are obtained by simply averaging the grades immediately above and below. The percentages at each grade are multiplied by the statewide 1989 public school fall enrollment. More than 45,000 Washington students (over 11 percent) in grades six through twelve can be considered heavy drinkers. While this represents a decline of approximately 6,000 students (12 percent of the population) reported in 1988, it is a clear reminder of the magnitude of the need for assistance in Washington's middle and high schools.

This is a conservative estimate since the statewide enrollment figures available for this report were for the 1989 school year, and statewide enrollment is increasing in recent years. In addition, alcohol and other drug use surveys typically underestimate use at each grade level since absent students tend to have higher rates of use and since some students may under-represent their use (Johnston, O'Malley & Bachman, 1989).

Finding: More than four percent of eighth graders report high use of drugs--a 23% increase over that figure in 1988. While high drug use has declined substantially in the other grades, over 16,000 Washington students in grades six through twelve can be considered heavy drug users.

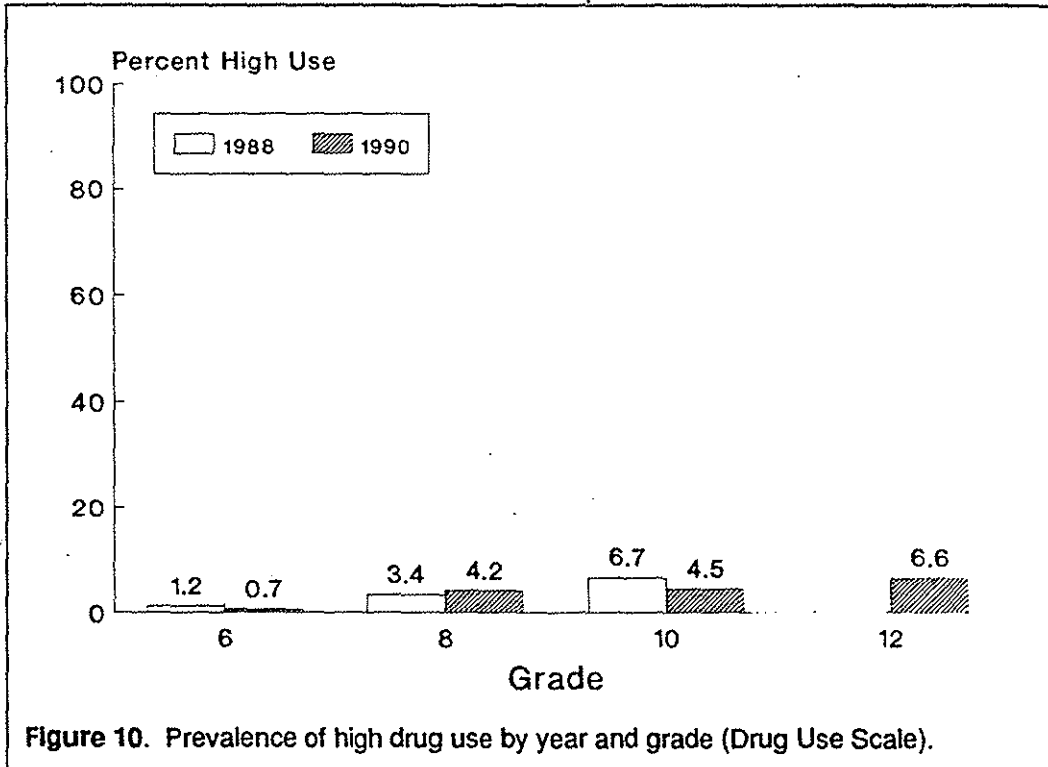


Figure 10 above shows the progression of students reporting high drug use across grade levels, especially between sixth and eighth grade. At sixth grade fewer than 1 percent report high drug use and at eighth grade over 4 percent report high drug use. Inhalant and over-the-counter use account for the most serious use at grade 6, while at grade 8, marijuana is the substance of heaviest use.

By interpolating between those grades surveyed, a conservative estimate of heavy drug users can be calculated. The procedures are the same as those discussed for alcohol use. Over 16,000 Washington students (over 4%) in grades six through twelve can be considered heavy drug users. Again, this is a decline from 1988 in which more than 21,000 students were estimated to be at this level of drug use. Still, it is a graphic reminder of the number of students needing immediate assistance.

As discussed above, this is a conservative estimate since the survey underestimates use at each grade level due to the effects of absenteeism and underreporting.

Patterns of Use

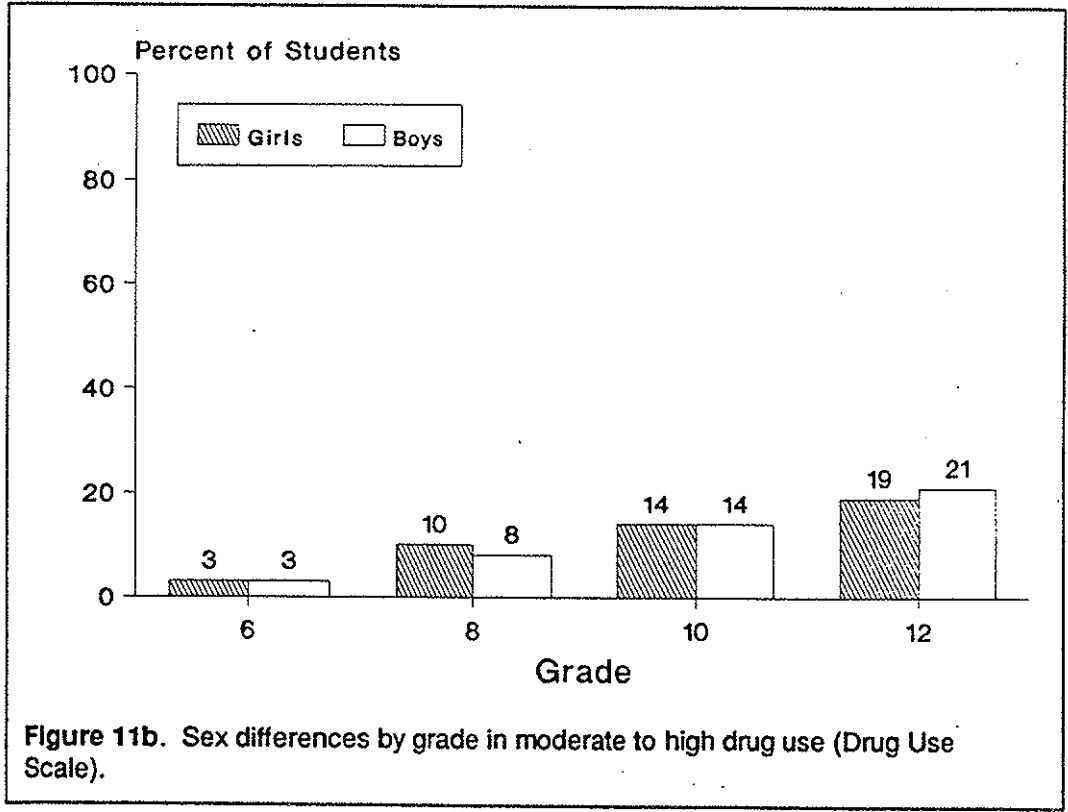
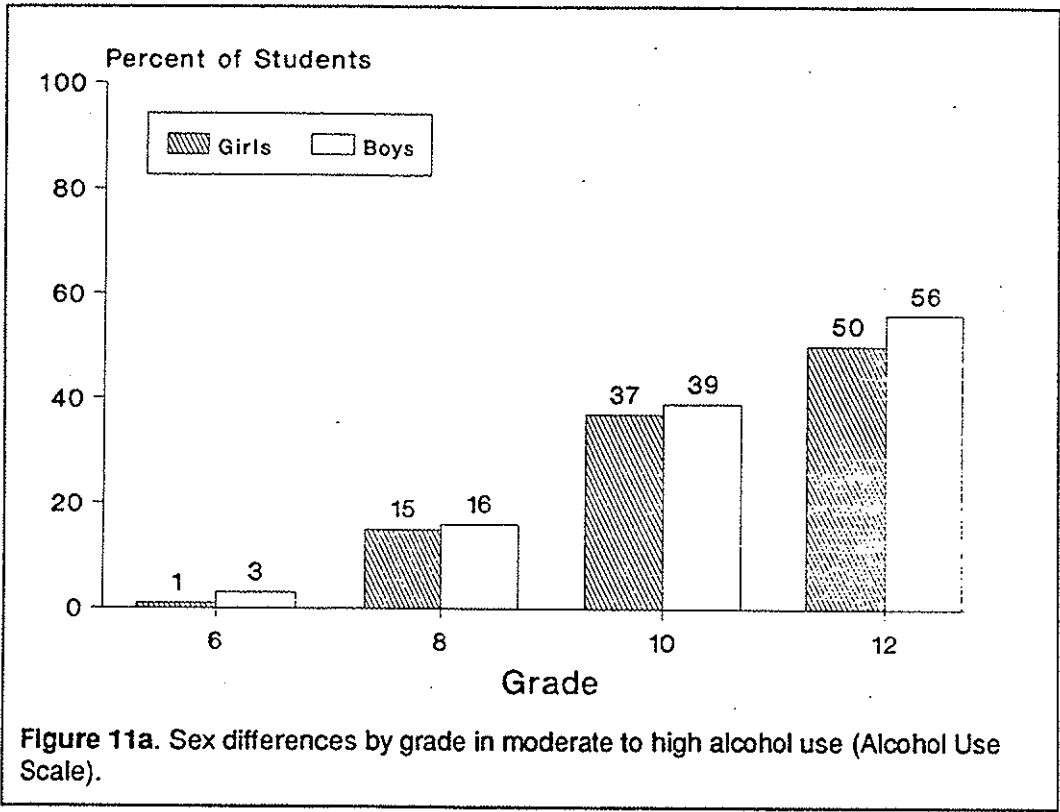
The aggregate results presented above can mask important differences in the use of alcohol and other drugs among students of varying characteristics. In this section, these patterns of use are investigated for students of different gender, ethnic background, geographic location, and urban/rural setting.

Finding: Sixth grade boys are more likely than girls to have tried alcohol or drugs. By eighth grade, however, girls have caught up and, in fact, surpass boys in terms of lifetime prevalence. Among regular users at grades ten and twelve, boys are twice as likely to drink heavily than are girls.

Table 3 presents the percent of Washington girls and boys by grade reporting various levels of alcohol and drug use. Percentages have been rounded to whole numbers. Figure 11 displays sex differences in moderate to high use by grade for alcohol and other drugs.

Table 3. Sex differences by grade on selected indicators of substance use.

Indicator	Grade 6		Grade 8		Grade 10		Grade 12	
	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys
Alcohol Use Scale								
Lifetime prevalence	30	36	63	57	77	74	84	82
Low use	29	34	48	42	41	36	34	27
Moderate use	1	2	9	9	24	19	35	24
High use	<1	1	6	7	13	20	15	32
Drug Use Scale								
Lifetime prevalence	8	12	25	22	33	32	41	41
Low use	6	9	16	14	20	18	23	21
Moderate use	2	2	6	4	10	9	14	12
High use	1	1	4	4	4	5	5	9

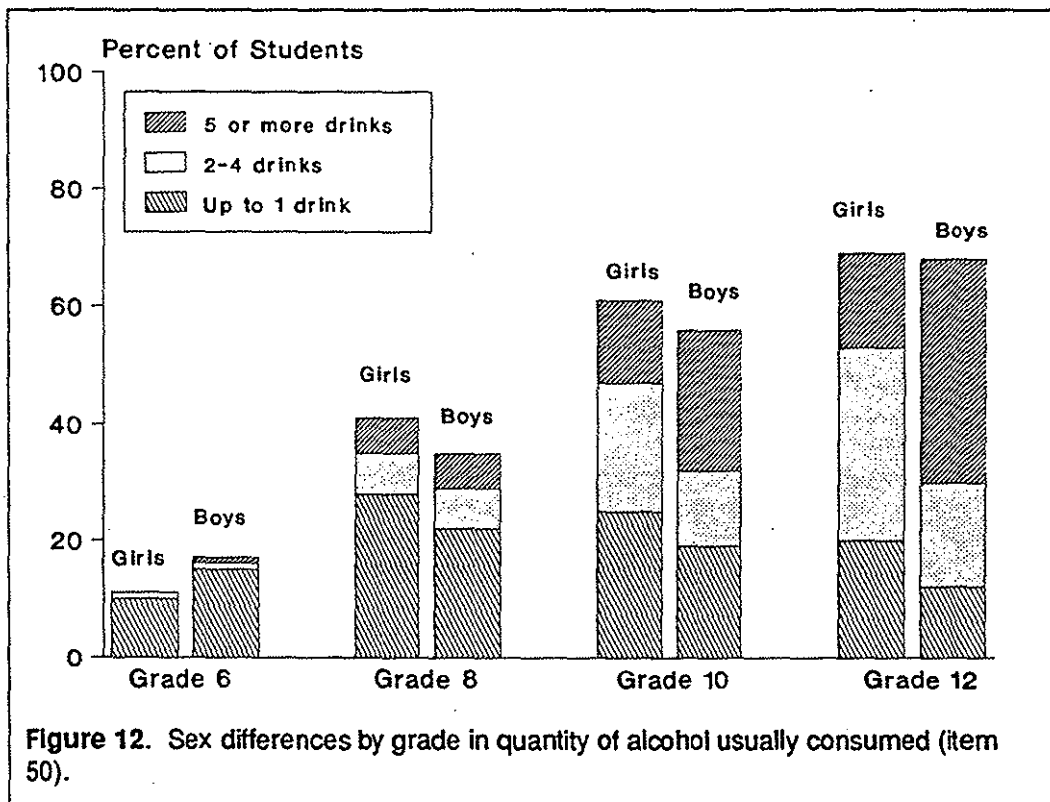


As shown in Table 3, more sixth grade boys than girls report having tried alcohol but girls have caught up by eighth grade. In terms of moderate to high use of alcohol, boys exhibit slightly higher use rates, but until the twelfth grade, these differences are minor.

More sixth grade boys than girls also report having ever tried illicit drugs but again girls have caught up by eighth grade. As displayed in Figure 11, the differences in moderate to high drug use are even smaller than those reported for alcohol.

The "moderate to high" level of use is featured in Figure 11 for consistency with other alcohol and drug use findings presented in this report. But in this case, it masks an important sex difference, at least among high school students. It is clear from Table 3 that girls are the more moderate users and boys the high users, particularly for alcohol. In fact, boys are about twice as likely as girls to be high users.

The tendency for high school boys to be heavier users of alcohol is displayed in Figure 12, using other data from the survey. Students were asked the amount they usually consumed when they drank. As suggested by the Alcohol Use Scale data in Table 3, more girls are shown to drink at moderate levels (up to one drink per occasion) than boys. In high school, a higher proportion of girls drink 2-4 drinks than do boys. But the heaviest drinking--more than 5 drinks (binge drinking)--is clearly more in evidence among boys than girls.



Finding: Students with different ethnic backgrounds tend to exhibit different patterns of alcohol and drug use.

Other studies have shown that students with different ethnic backgrounds exhibit different patterns of drug use. In Hawaii, white and native Hawaiian students reported high use of alcohol and drugs while students with Asian background reported relatively low use (Deck & Nickel, 1989). In California, white and Native American eleventh graders drank and used marijuana more frequently than other groups, while Asians reported the least use of both substances (Skager, Austin & Frith, 1990). In Washington in 1988, Native American and White students showed significantly higher rates of alcohol and drug use than other ethnic groups.

In a series of monographs entitled *Prevention Research Updates*, the Western Center for Drug-Free Schools and Communities has synthesized research on ethnic differences in substance use (Austin, 1988; Austin & Gilbert, 1989; Prendergast & Austin, 1989; Austin, 1990).

Figure 13 displays the percent of students in each ethnic group reporting moderate to high alcohol or drug use at each grade. Interpretations of differences among non-white groups are made with greater caution due to the relatively low numbers of minority students in Washington as a whole (taken together, all four non-white ethnic groups make up about 15% of the statewide student population) and in the survey sample as well. For example, the Native American sample in this survey ranges from two percent to six percent of the students surveyed, depending upon grade level. With approximately five thousand students surveyed at each grade, the total Native American sample varies from about one hundred to three hundred students per grade. A two or three percent discrepancy in use rates for this group can represent only four or five students reporting moderate to high use.

At grade six, the use rates are so low, ranging from less than one to four percent of the students, that differences among ethnic groups are well within sampling error and do not merit interpretation. At higher grades, however, the differences become more major. Asian students consistently report the lowest use, typically less than half that of the highest using ethnic groups. Differences among Blacks, Hispanics, Native Americans and White students tend to diminish as students get older. At eighth grade, nearly twice as many Native Americans (28%) as Whites (15%) report moderate to high alcohol use. By the twelfth grade, all four of these ethnic groups (i.e., excluding Asians) vary by only eight percent in regular use of alcohol.

A similar pattern exists for regular use of drugs. Again, sixth grade use is so low that ethnic differences cannot be confidently interpreted. At higher grades, Asian students again exhibit less than half the use rates as the highest using groups at these grades. Native American students report the highest use at each grade, but Black student use is equally high at grades ten and twelve.

These results are in some contrast with those reported in the 1988 survey. Figure 14 displays the comparison of moderate to high alcohol and drug use among ethnic groups at the tenth grade level reported in 1988 and 1990 surveys. Significant declines in both alcohol and drug use are visible for Native Americans and Whites at this grade. Hispanic students show increased moderate to high use of alcohol, while Black students show a similar increase in drug use.

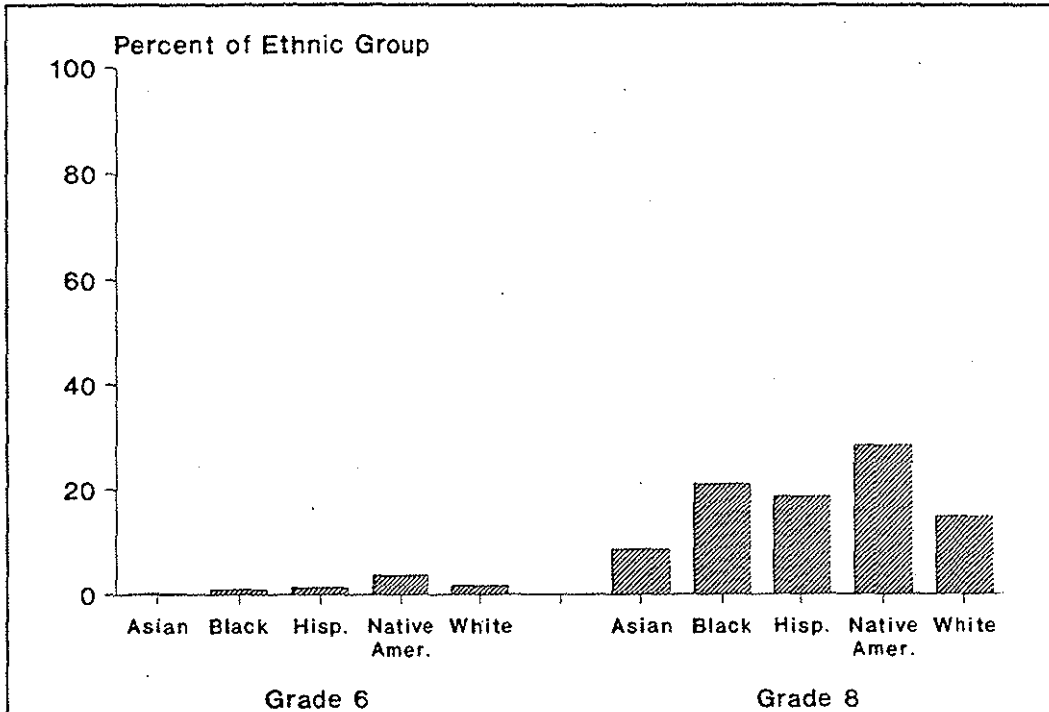


Figure 13a. Comparison of moderate to high alcohol use by ethnic group at sixth and eighth grades (Alcohol Use Scale).

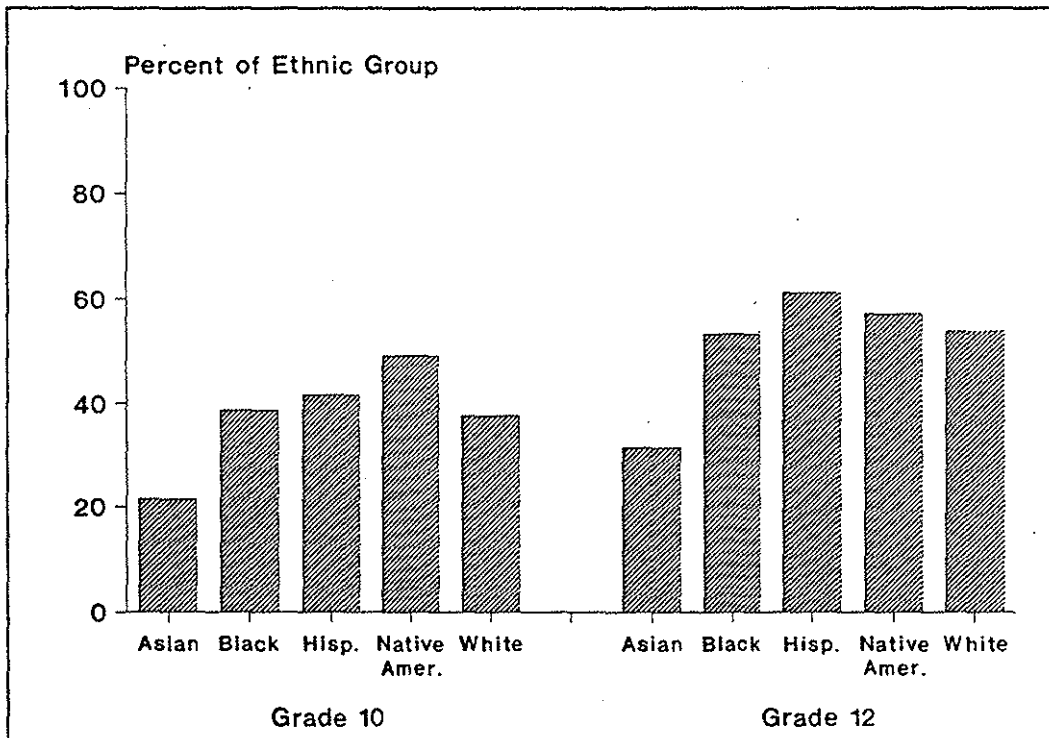


Figure 13b. Comparison of moderate to high alcohol use by ethnic group at tenth and twelfth grades (Alcohol Use Scale).

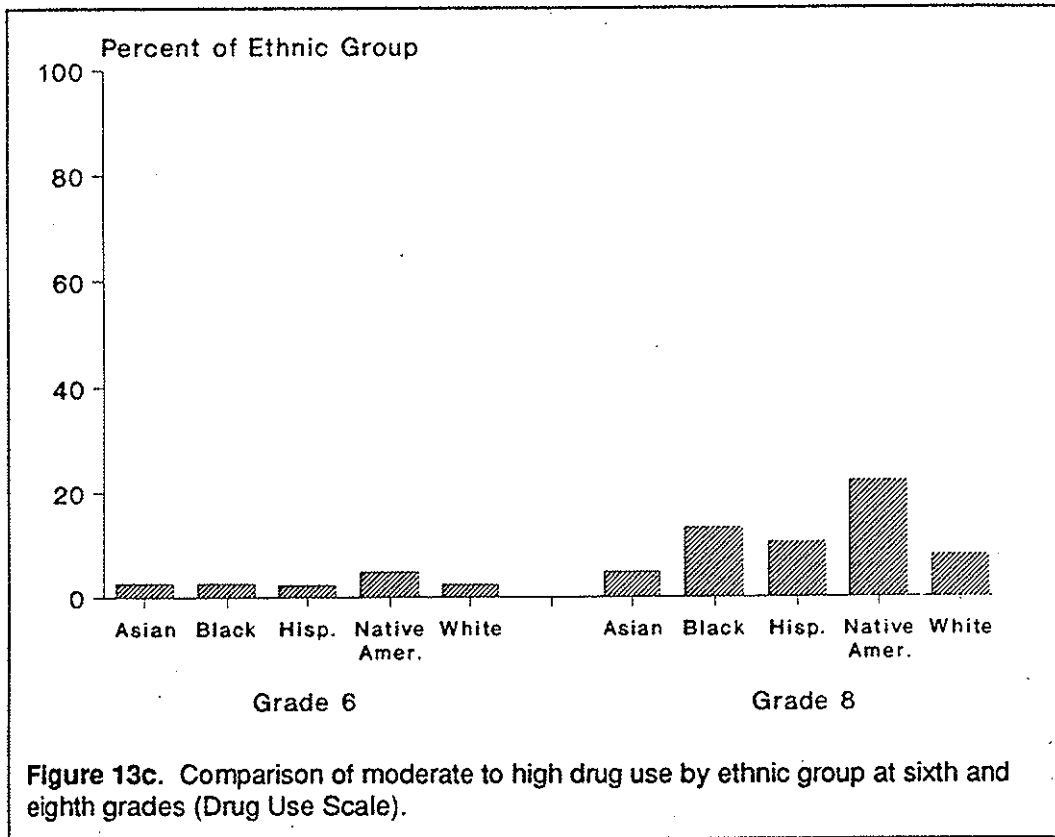


Figure 13c. Comparison of moderate to high drug use by ethnic group at sixth and eighth grades (Drug Use Scale).

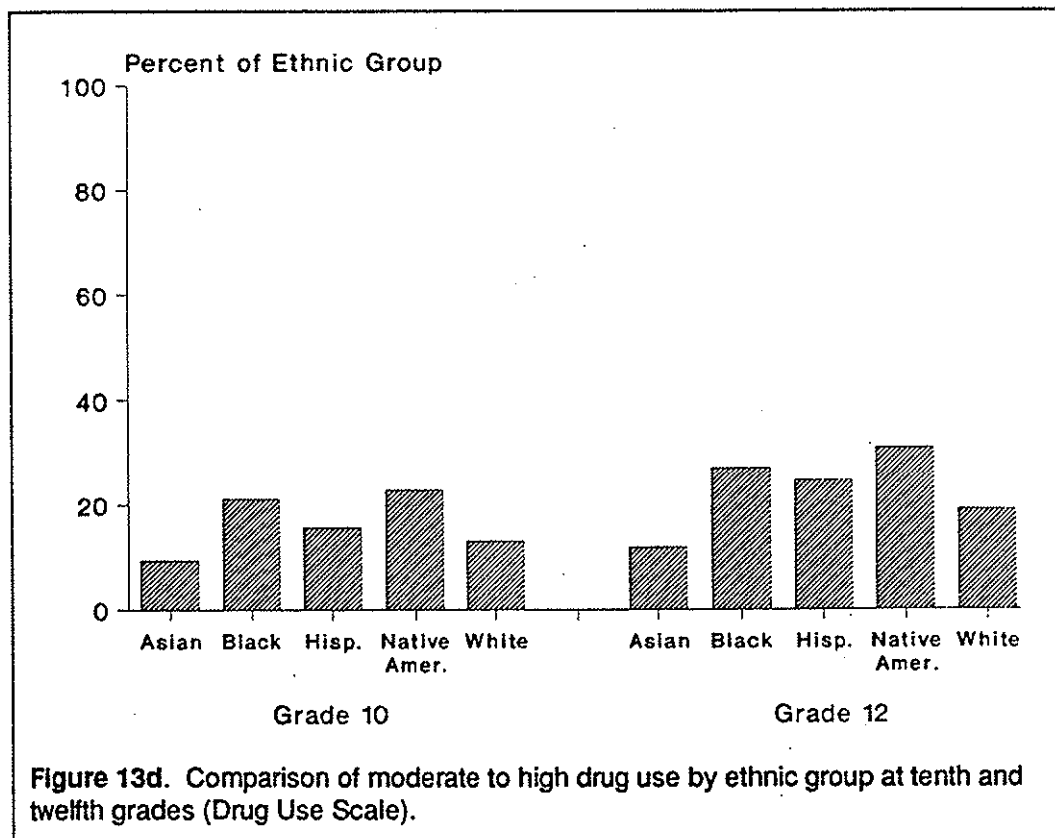
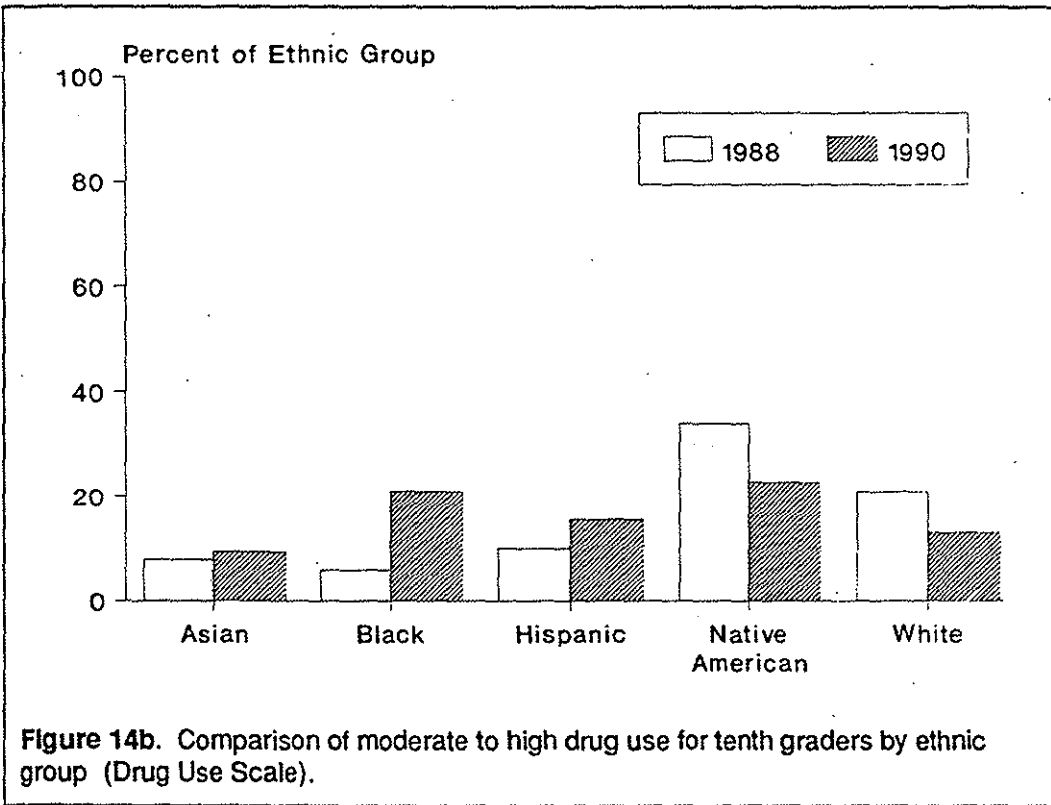
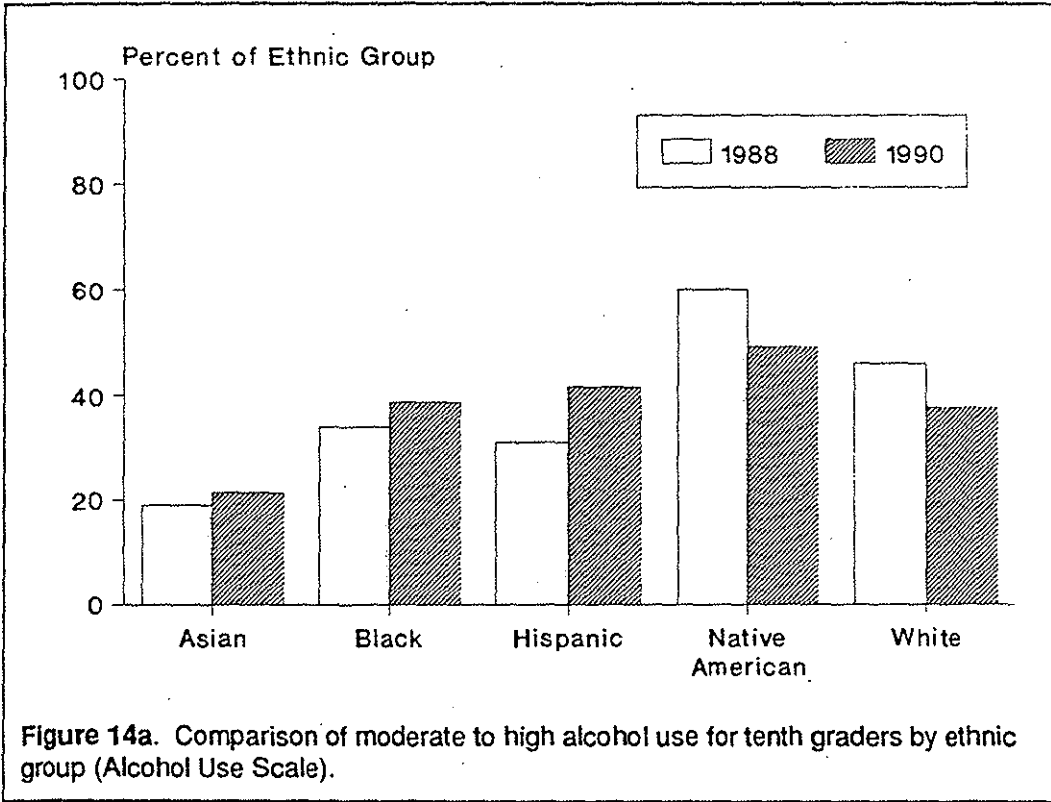


Figure 13d. Comparison of moderate to high drug use by ethnic group at tenth and twelfth grades (Drug Use Scale).



Finding: There are no consistent differences among the five geographic regions within the state.

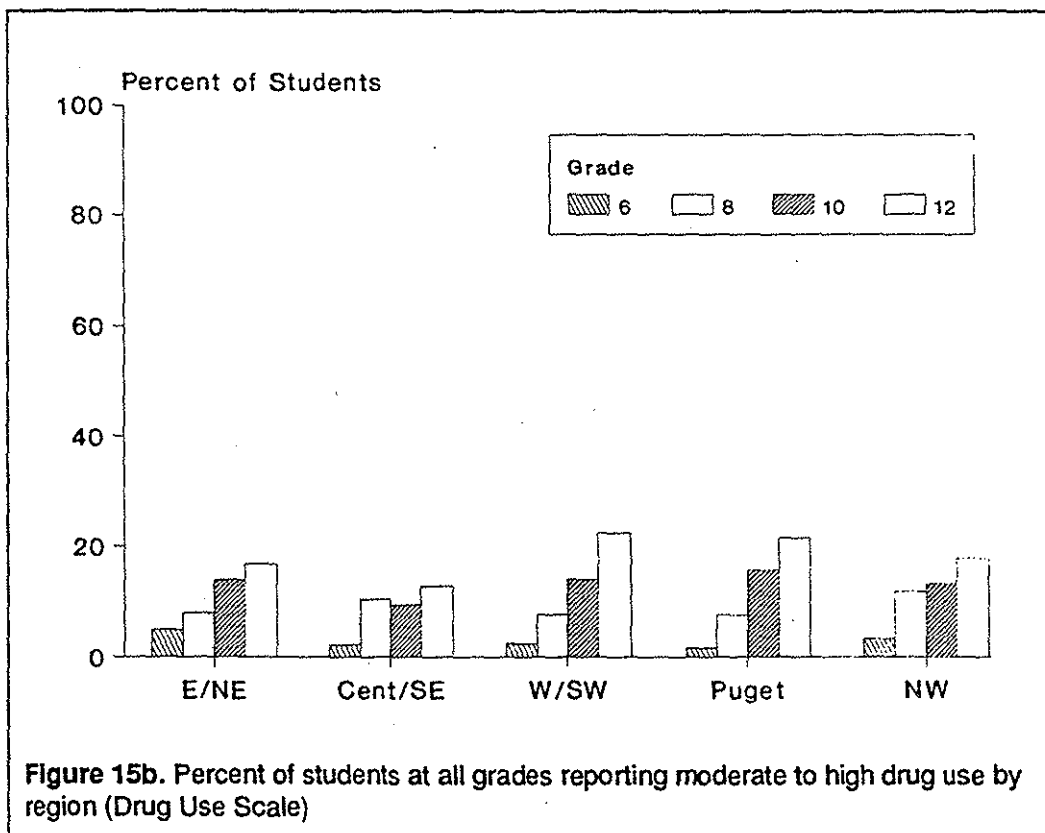
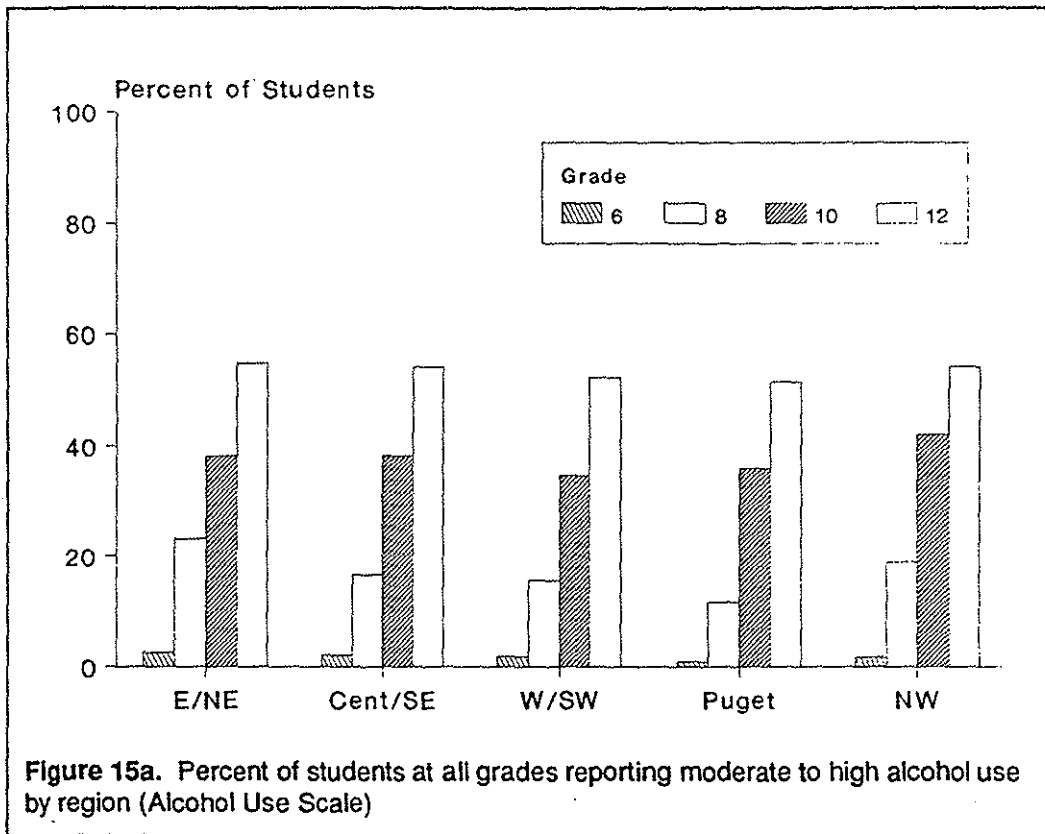
When alcohol and drug use was examined by region, only small differences were observed at some grade levels. Figure 15 compares the percent of students at each grade reporting moderate to high alcohol and drug use in each of the regions. Both alcohol and drug use typically vary by only a few percent of the students at each grade. Perhaps the only exception is in the fluctuation in alcohol use among eighth graders. Nearly twice as many students in the East/Northeast region (23%) report moderate to high alcohol use as in the Puget Sound area (11%).

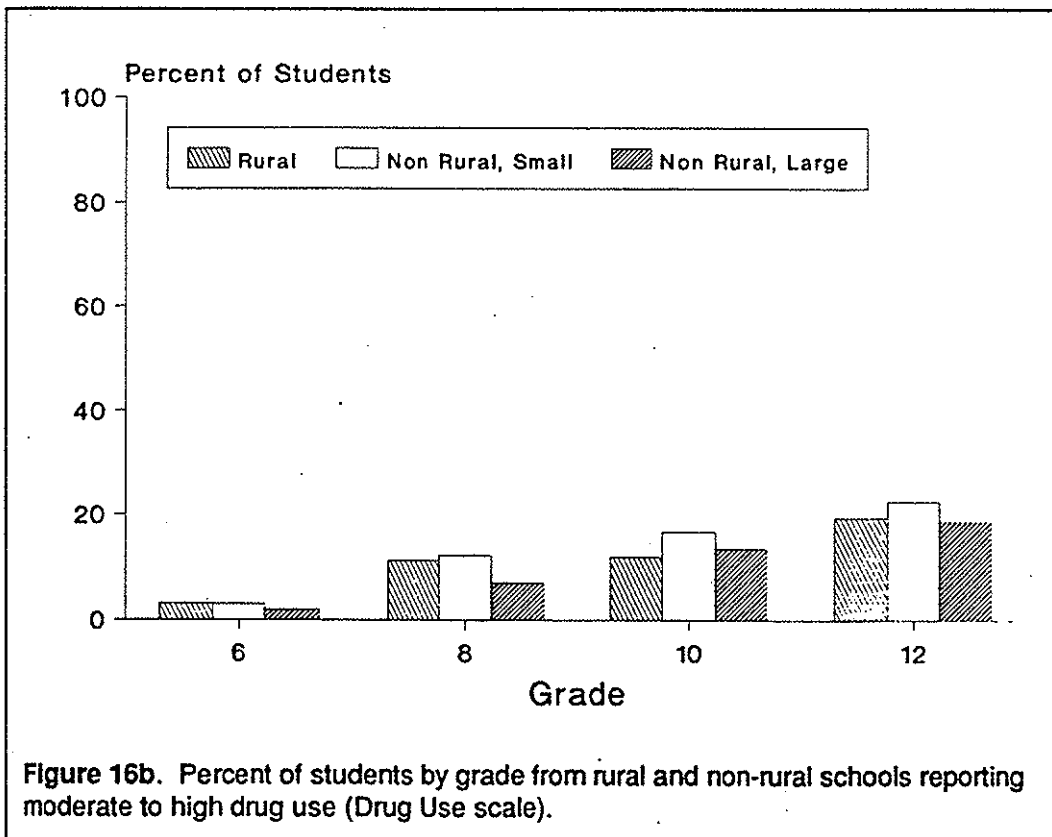
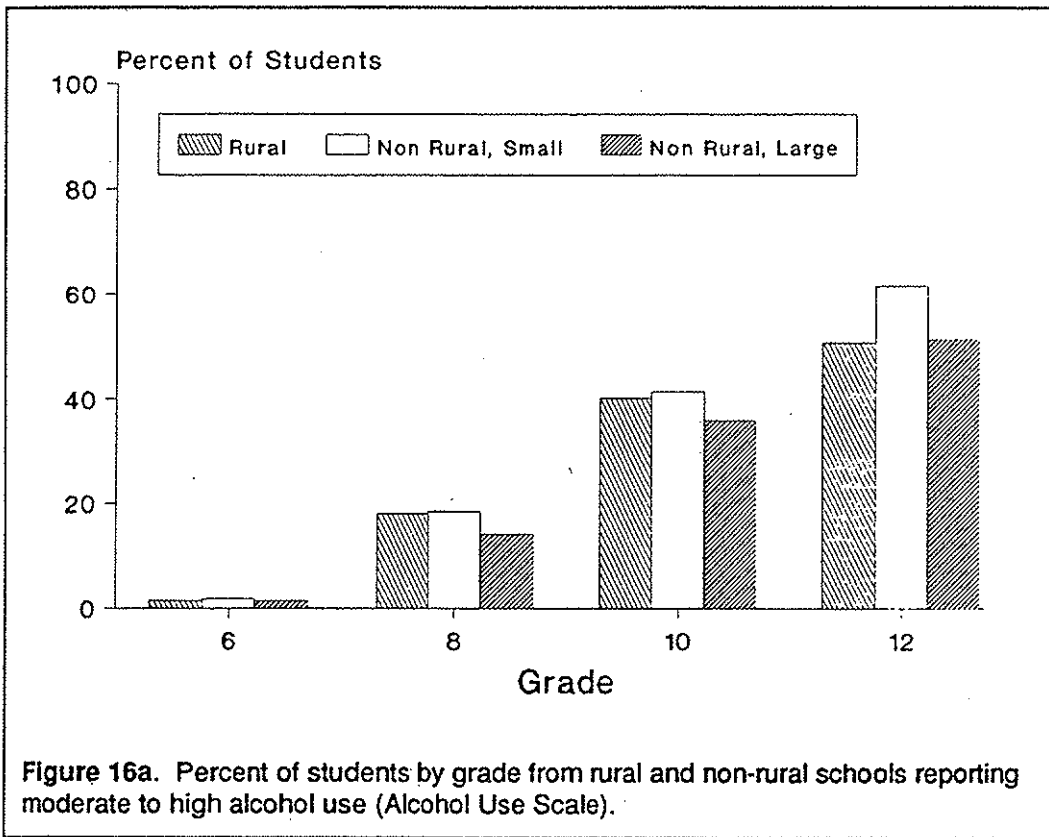
Finding: Alcohol and drug use is not confined to large urban areas.

In the past, substance use by adolescents was often characterized as primarily a problem found in large urban areas with gang problems. More recently, surveys and research studies have shown that many rural areas are faced with serious problems with drinking and drug use. A recent GAO report to Congress asserted that "total substance abuse rates in rural states are about as high as in non-rural states." (General Accounting Office, 1990)

As in 1988, there are no significant differences in moderate to high alcohol or drug use in rural and urban schools. Figure 16 compares the percent of students by grade from rural and non-rural schools reporting moderate to high alcohol or drug use. In the 1990 survey, non-rural schools were further divided into small and large areas to more sensitively test the hypothesis that it is the large, urban areas that have the most serious problems with substance abuse. As shown in the figure, the differences between rural and non-rural schools were very small, but if any of these groups tends to exhibit higher use rates, it is the small, non-rural areas at higher grade levels.

As in the 1988 survey, the sampling of schools was stratified by the size/rurality combination cited above and geographic region within the state. The only indicators available to distinguish between rural and non-rural schools were at a district level rather than at a school level. School districts with less than 75 percent residents living in a rural setting based on the 1980 census were classified as non-rural.





Factors Related to Use

Recently, buoyed by research identifying "risk factors" for adolescent drug use (Hawkins, Lishner & Catalano, 1986), prevention efforts have increasingly focused on other behaviors and factors which relate to alcohol and other drug use. Many items in the survey probed these behaviors and activities. Among these factors investigated in this section are:

- Use by friends and peers
- Perceptions of risk in using various substances
- Perceptions of parental attitudes toward use
- Ease of access to alcohol and drugs
- Participation in extra-curricular activities
- Educational aspirations

Finding: The opportunities to use alcohol or drugs with friends increase by grade and are at or above the levels reported in 1988.

Peer influence is thought to be a major factor in initiating and maintaining use of most drugs. This influence may be subtle and students may not admit to it, although a *Weekly Reader* survey of fourth and fifth graders revealed that many students at this age are already feeling pressure to use alcohol and marijuana. In the present study, students were asked about peer use of drugs and attendance at parties where alcohol or other drugs are served.

Figure 17 shows the increase by grade in the proportion of students' who report that "most" or "all" of their closest friends use alcohol at least once a month. This percentage is up slightly from 1988 at the tenth grade. Nearly forty percent of the high school seniors indicate that most or all of their closest friends drink alcohol monthly.

Other substances were also included in these questions. By the twelfth grade, most students have friends who use tobacco (68%) or marijuana (51%) at least once a month.

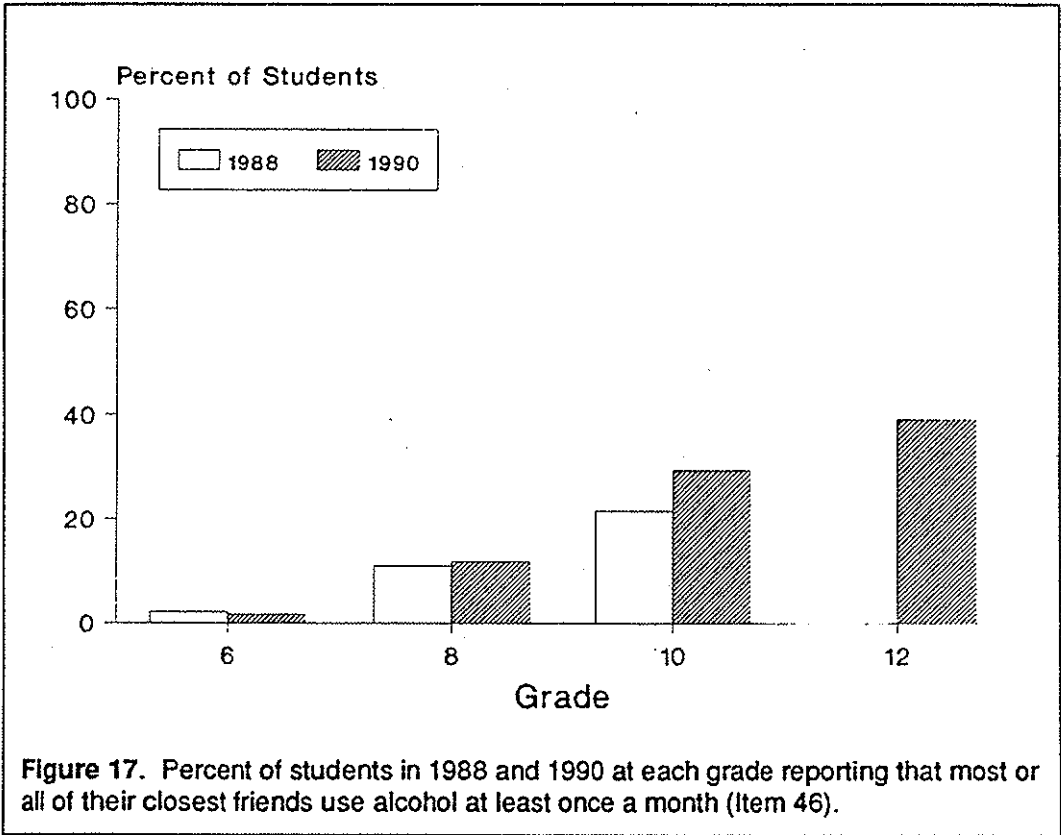


Figure 18 charts the increase in attendance at parties where alcohol, drugs, or both are used. Students were asked whether these substances were used at **most** parties they attended. By sixth grade more than one in three (37%) responded yes--a dramatically higher percentage than in 1988 at this grade. By eighth grade over half (54%), and by tenth and twelfth grade about three-fourths (72% and 75%, respectively) responded yes. The percent who report both drug and alcohol use at parties increased from 3 percent at sixth grade to 34 percent at twelfth.

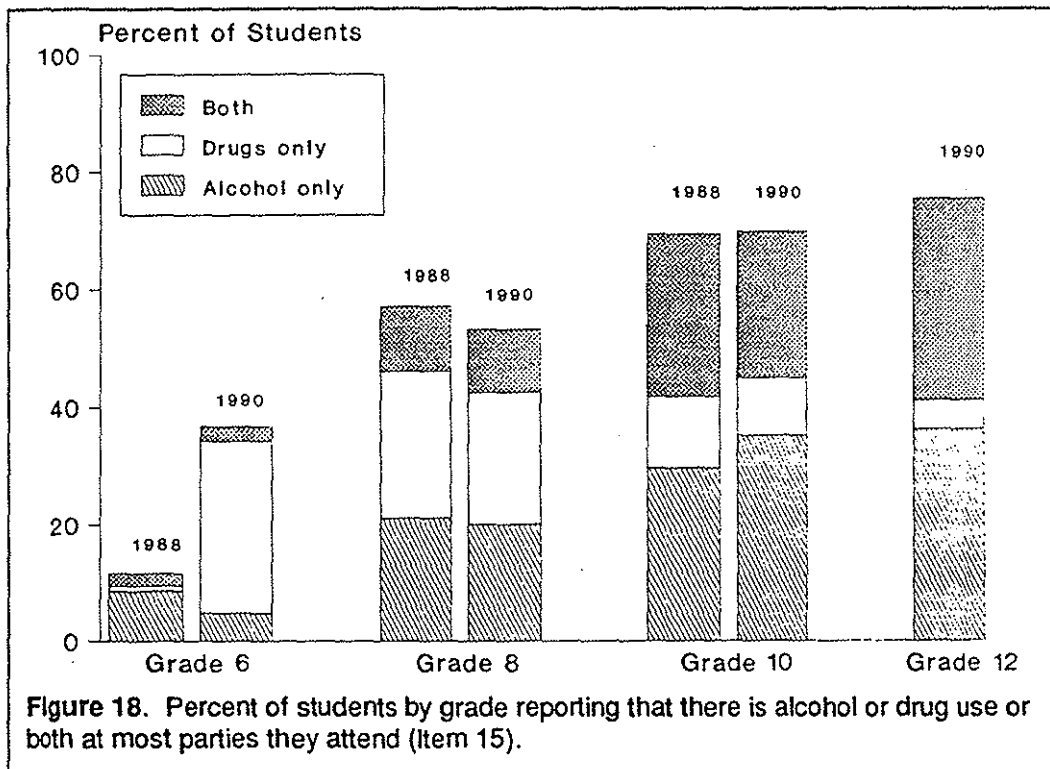


Figure 18. Percent of students by grade reporting that there is alcohol or drug use or both at most parties they attend (Item 15).

Together, these findings suggest increasing exposure to alcohol and drug use through peers and closest friends. Obviously, this exposure is also associated with pressures to use. With these increased opportunities to use, the previously cited reductions in use rates at all grades since 1988 are even more impressive. Perhaps, the current emphasis on teaching decision-making and refusal skills in prevention curricula has had its desired effect. This may also be an indication of the prevalence of the feeling that "other kids do it."

Finding: Students not only perceive an alcohol or drug problem among students attending their school, but also report alcohol or drug use during the school day.

Increased attention has recently been paid to keeping school buildings and school zones free of the influence of drugs. In 1989, the National Association of Chiefs of Police began the movement toward establishing Drug-Free School Zones in the nation's schools. In some contrast, a PRIDE survey of high school students in 38 states indicated that "4% or less actually use drugs during school." (PRIDE, 1989)

To determine the effects of substance abuse in the school setting, respondents were asked whether students attending the school had a drug or alcohol problem and whether there was alcohol or drug use during the school day.

Figure 19 shows a dramatic increase from sixth to tenth grade in the percent of students who perceive an alcohol or drug problem among students attending the school. In tenth and twelfth grade, about 85 percent say that some or a lot of kids have a problem with substance use.

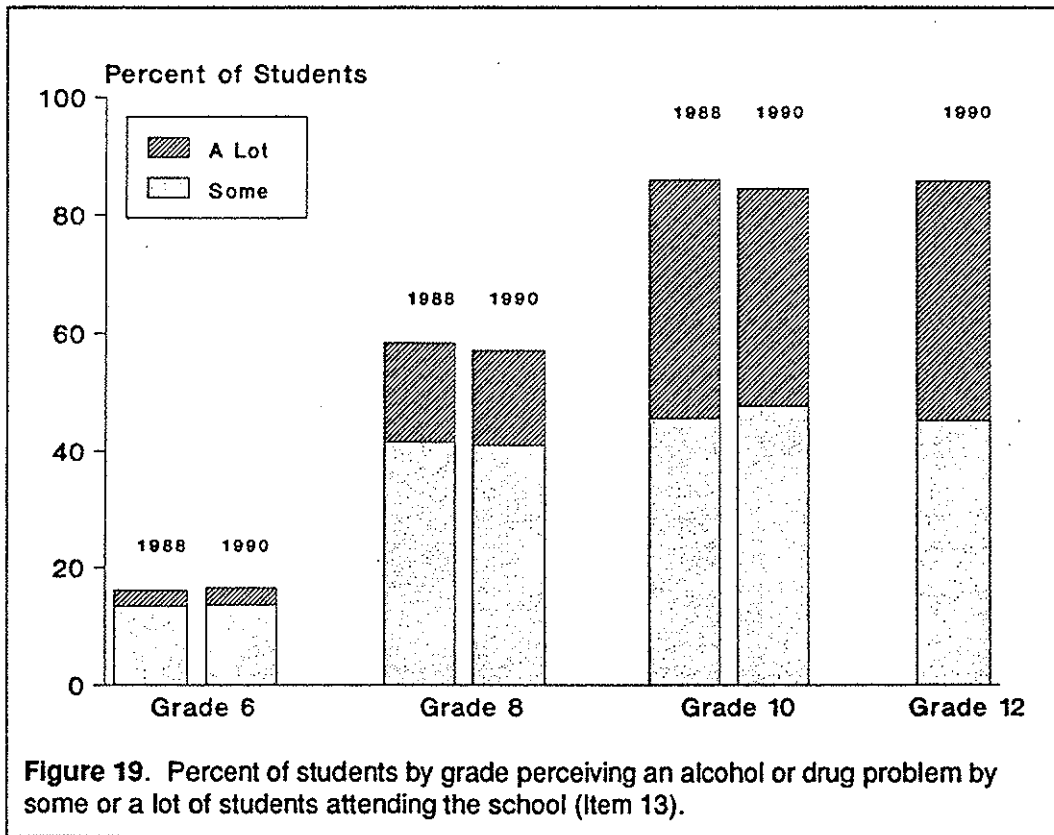
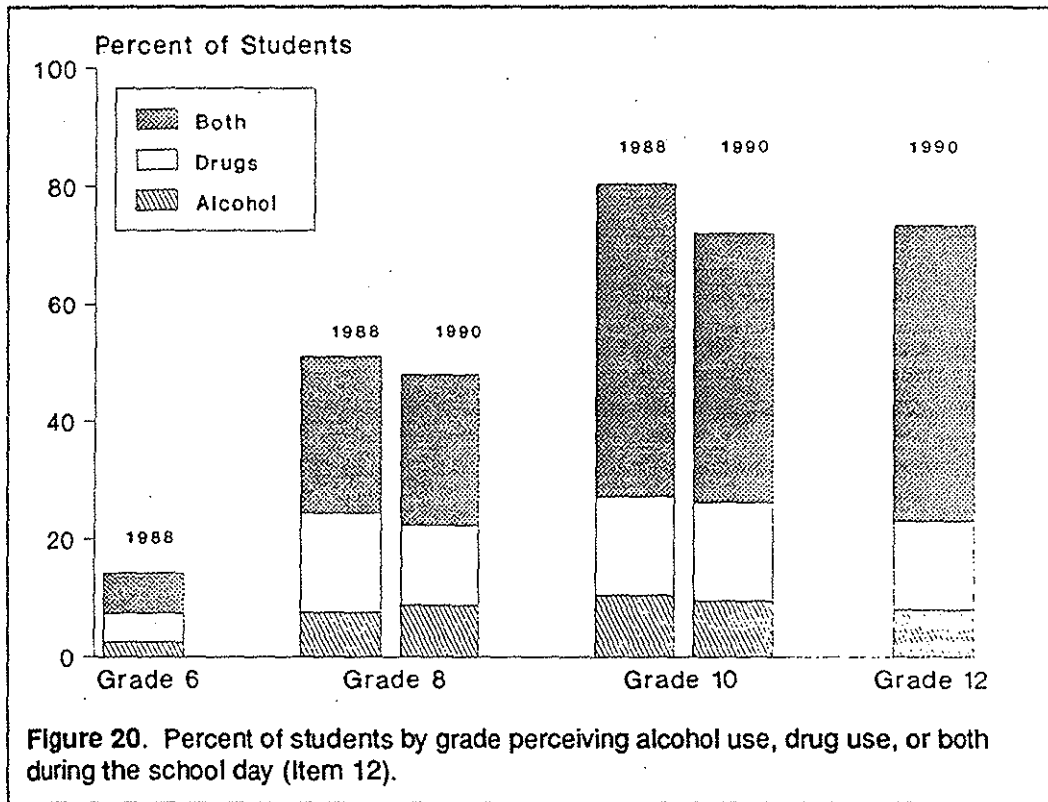


Figure 19. Percent of students by grade perceiving an alcohol or drug problem by some or a lot of students attending the school (Item 13).

When asked whether there was use during the school day, a surprising number reported that there was, although these percentages are slightly lower than those in 1988. Figure 20 shows the percent reporting substance use during the school day at their school. At eighth grade nearly half (48%) report some use at school and by twelfth grade nearly three-fourths perceive there is use at school. The stark contrast reported here with those cited previously from the PRIDE survey (4%) may be in the wording of the items. The PRIDE survey asks for the "most popular" places to use alcohol or drugs, and offers such locations as school, car, home, friend's home and other places in the community. Finding school not to be the most popular location for use does not necessarily mean alcohol or drugs are not used there. (However, the quotation given earlier is an accurate one from the PRIDE press release.)



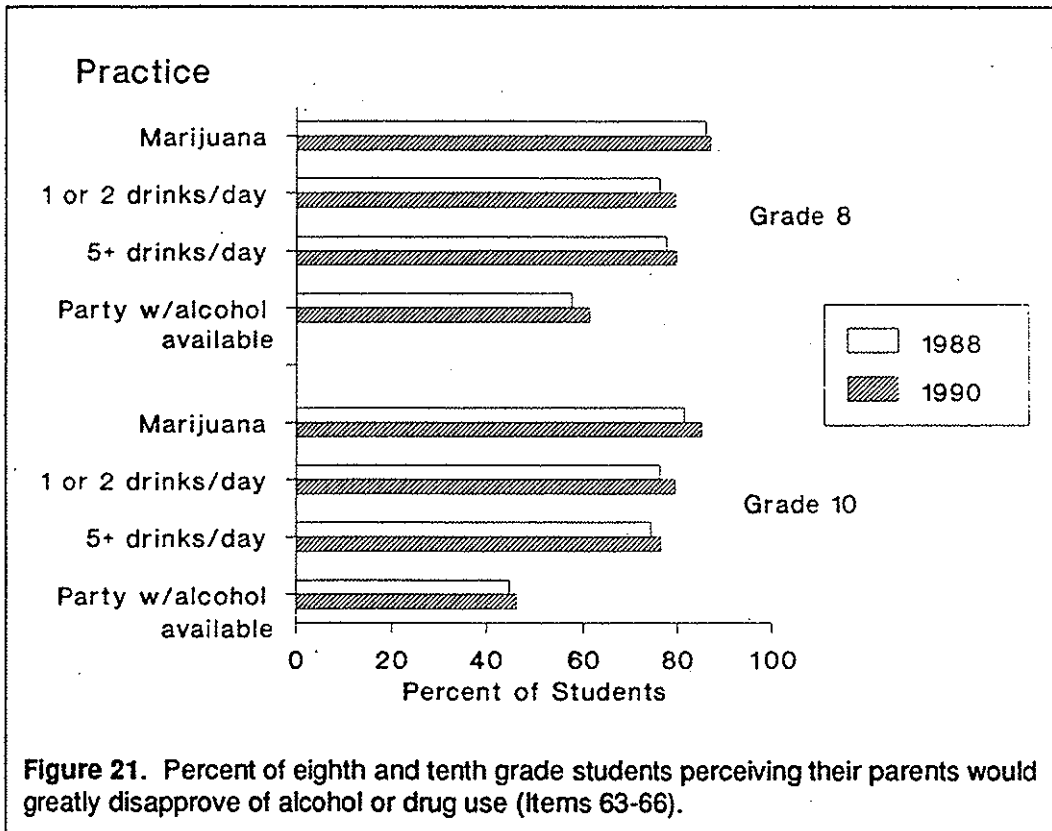
Finding: Students perceive their parents as more disapproving of alcohol or drug use in 1990 than in 1988.

To determine what kind of message students receive at home, a series of questions probed student perceptions of their parents attitudes about different forms of substance use. In Figure 21, the percent of eighth and tenth grade students perceiving disapproval from their parents for the following alcohol or drug behaviors is displayed:

- Smoking marijuana occasionally
- Having one or two drinks nearly every day
- Having five or more drinks once or twice each weekend
- Attending a party at a friend's home where alcohol was available to you

In general, students indicated that their parents *greatly disapproved* of all of these forms of substance use--and consistently more so in this survey than in 1988. At both eighth and tenth grade, approximately eighty percent of students reported extreme disapproval on their parents behalf for their smoking marijuana and daily or binge drinking. As in 1988, however, students perceive their parents to be far more tolerant of their being at parties in a friend's home where alcohol is available to them. At grade eight, only 61% disapprove, and at grade ten 46% disapprove. Given the previous data indicating the quantities of alcohol usually consumed and the prevalence of binge drinking, parents' higher tolerance of attendance at parties where alcohol

or drugs are available may reflect a serious lack of awareness on their part about the levels of use of alcohol among their children and peers. This question was not asked of sixth graders in either 1988 or 1990, and of twelfth graders only in 1990.

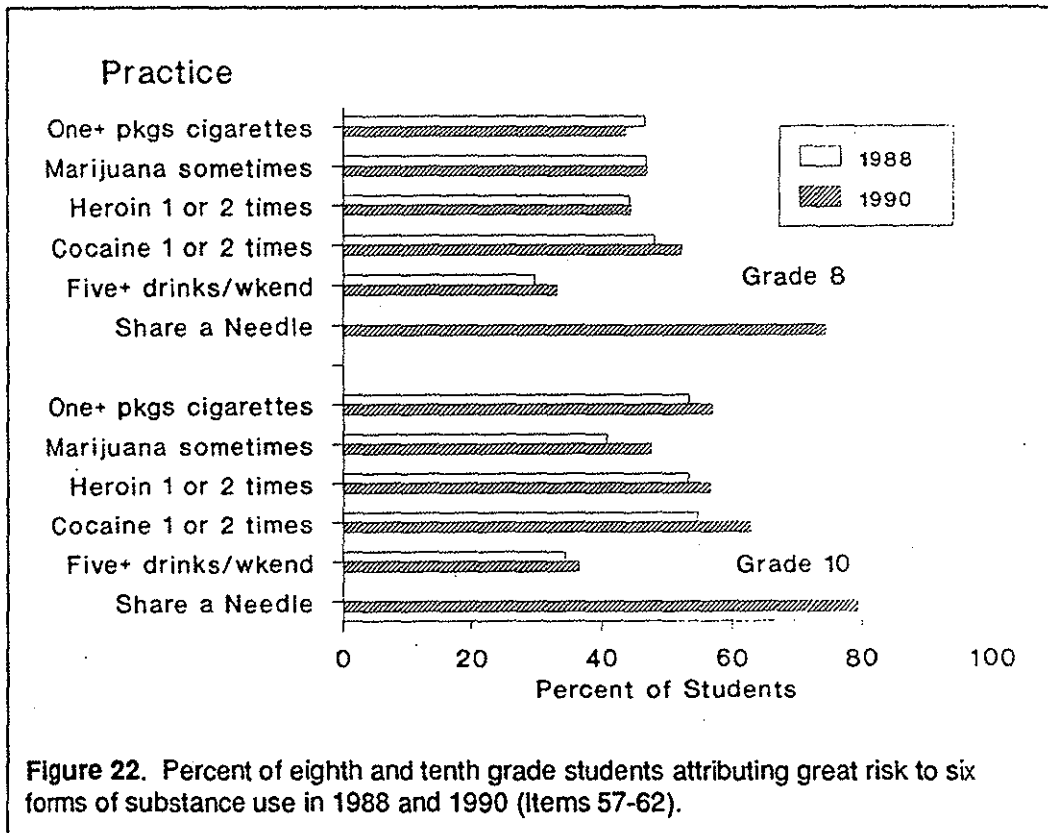


Finding: Students perceive great risk in drug use behaviors but much less in binge drinking. In general, this perception of risk increases with grade level--high school seniors see the greatest risk in alcohol and drug use. These perceptions of risk are higher than those reported in 1988.

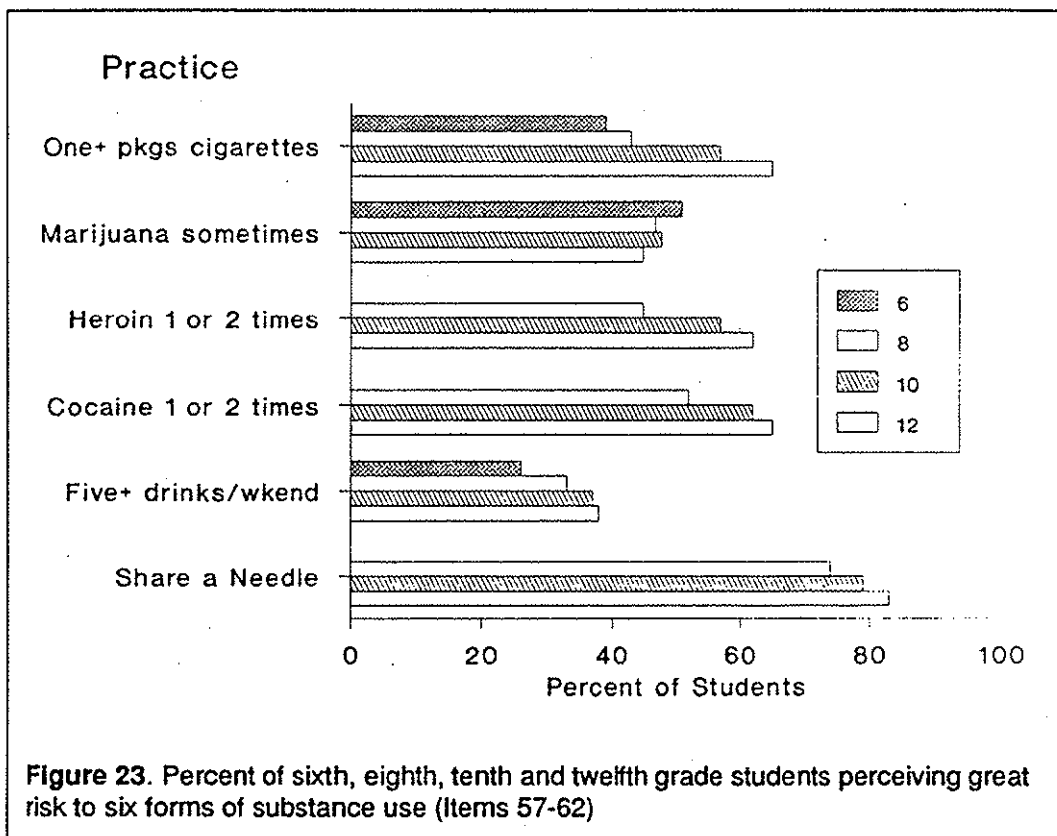
Eighth, tenth and twelfth graders were asked the extent to which people risk harming themselves through various forms of substance use. The differences in their responses to each item as shown in Figure 22 are illuminating. Again, since sixth graders were not asked all of these questions and since twelfth graders did not participate in the 1988 survey, only the comparisons with eighth and tenth graders are featured in the display.

While the use of tobacco and drugs are seen as highly risky by most students, they generally fail to recognize the health and safety risks of weekly binge drinking. Only about one-third of the eighth graders perceive great risk in drinking five or more drinks once or twice a weekend. More students at these grades see great risk in smoking one or more packs of cigarettes a day, smoking marijuana occasionally, and trying heroin or cocaine once or twice. Importantly, at both grades, most of these forms of alcohol and drug use are seen as more risky in 1990 than in 1988.

This increase in perceived risk is most pronounced with respect to cocaine use at eighth grade and marijuana and cocaine at grade ten.



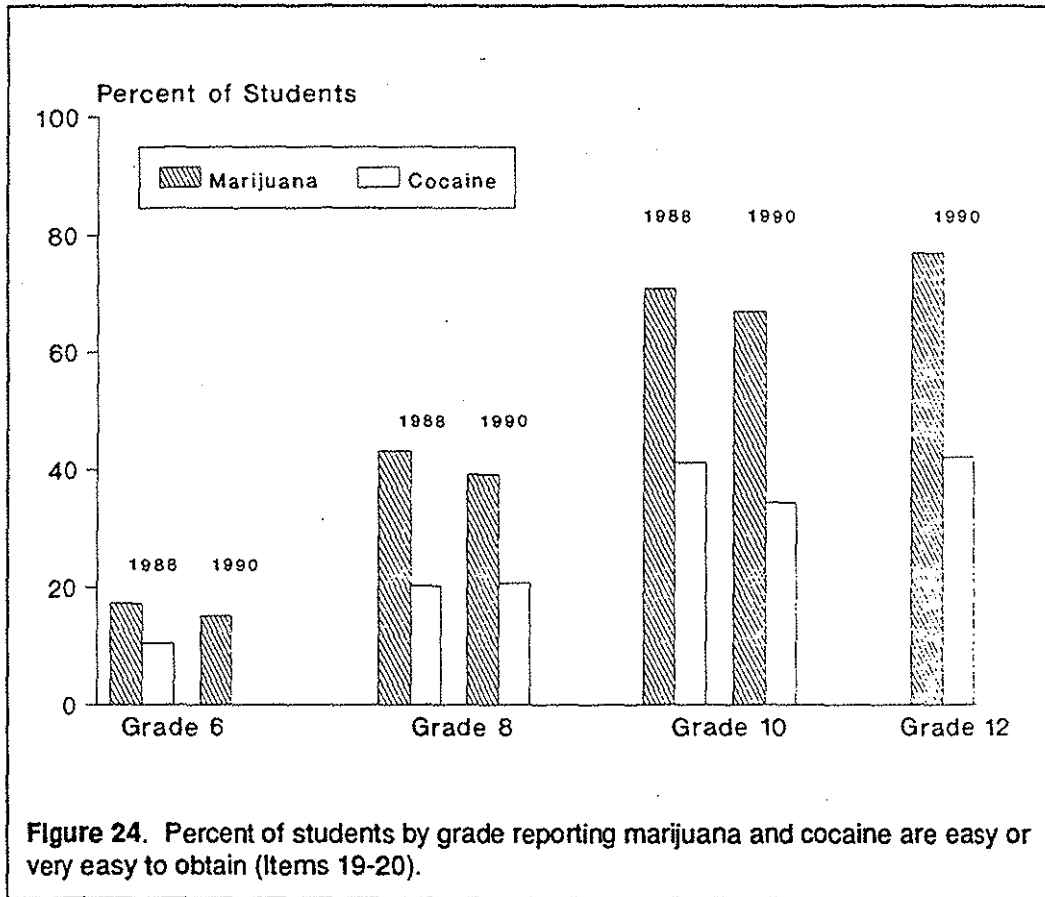
Interestingly, students perceive greater risk in alcohol and drug use as they get older. In Figure 23, the percent of students in grades eight, ten and twelve perceiving the six forms of substance use as of great risk is displayed. Only occasional marijuana use fails to follow this trend. Without question, students do perceive the risk of getting AIDS through sharing needles to inject drugs. Seventy to eighty percent of the eighth, tenth and twelfth graders attribute great risk to this.



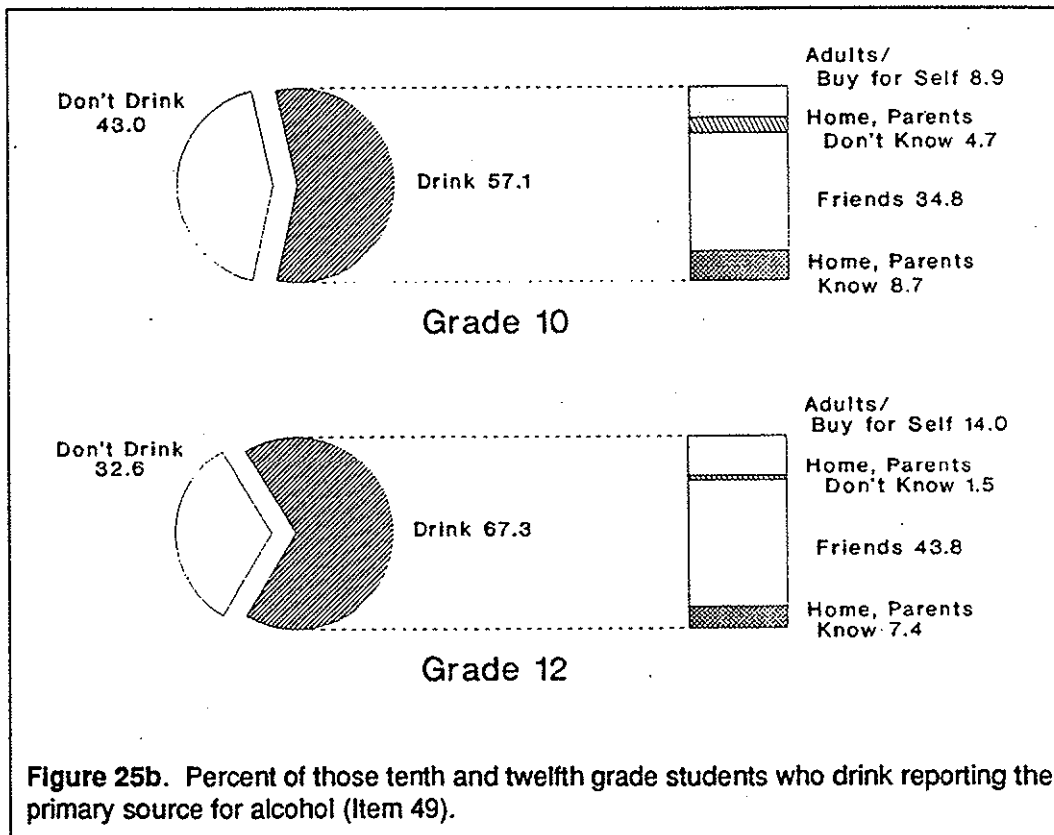
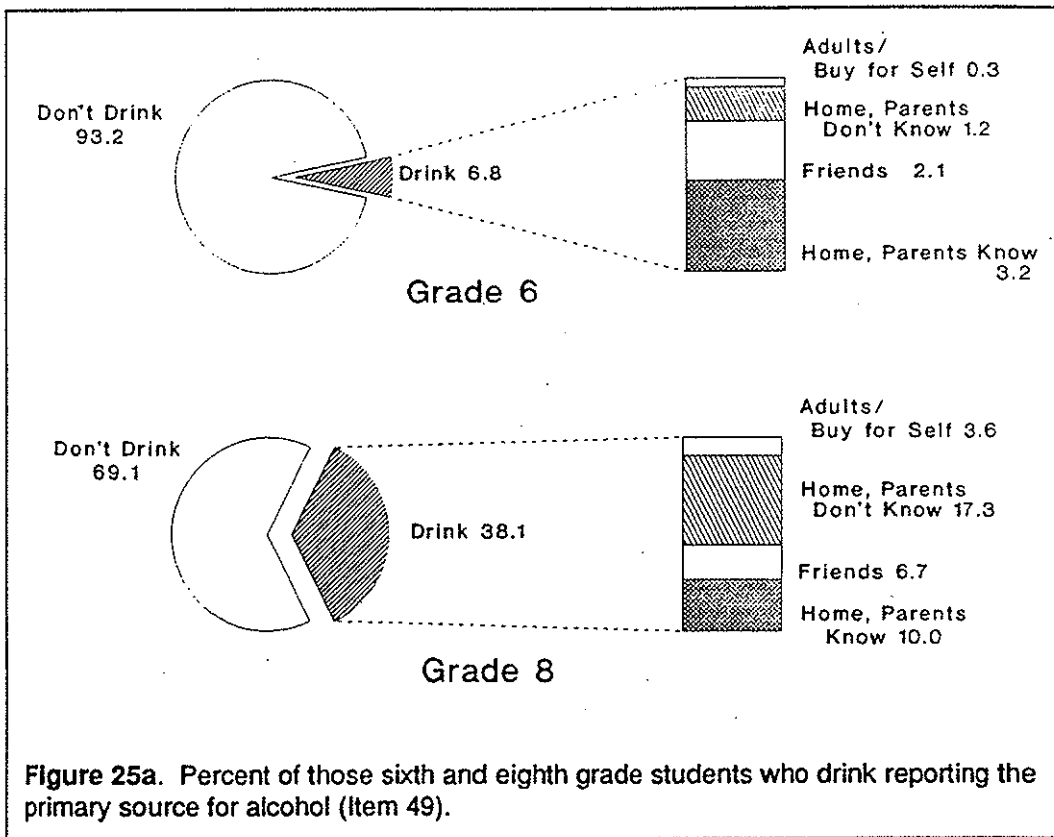
Finding: Students find it progressively easier to obtain illicit drugs as they get older. In 1990, fewer students report marijuana and cocaine are easy to get than in 1988.

Figure 24 shows, as grade level increases, students perceive that drugs are increasingly *fairly easy* or *very easy* to get. Although few sixth graders would find it easy to obtain marijuana (15%), two thirds of the tenth graders report that it would be easy to get marijuana (67%) and about one-third; cocaine (34%). All of these figures are only slightly lower than their 1988 counterparts.

Students were also asked where they usually obtain alcohol if they drink. In 1988, the majority of students who used alcohol reported they got it from friends, with the exception of grade six students, most of whom indicated that they drank at home and their parents knew about it. To compare these patterns with 1990 results, it must first be reiterated that substantially fewer students drink at these grades than was the case in 1988. For example, only 73% of the sixth grade students indicated they did not drink in response to this question in 1988. In the current survey, 93% of the sixth graders report not drinking. Differences at grades eight and ten are not as dramatic, but represent significant declines nonetheless. These figures are consistent with the findings on lifetime prevalence and regular use of alcohol presented earlier in this report.



In Figure 25, the source of alcohol is displayed for that proportion of students at each grade who drink. Although a large portion of the sixth graders who drink do this at home with parents' knowledge, this percentage (3% or just under half of the 7% who drink) is far smaller than in 1988 (19% or more than three-fourths of the 27% who drank). At all other grades, the largest percentage of students who drink obtain the alcohol from friends. Beyond eighth grade, progressively fewer students do their drinking at home, with or without parents' knowledge.



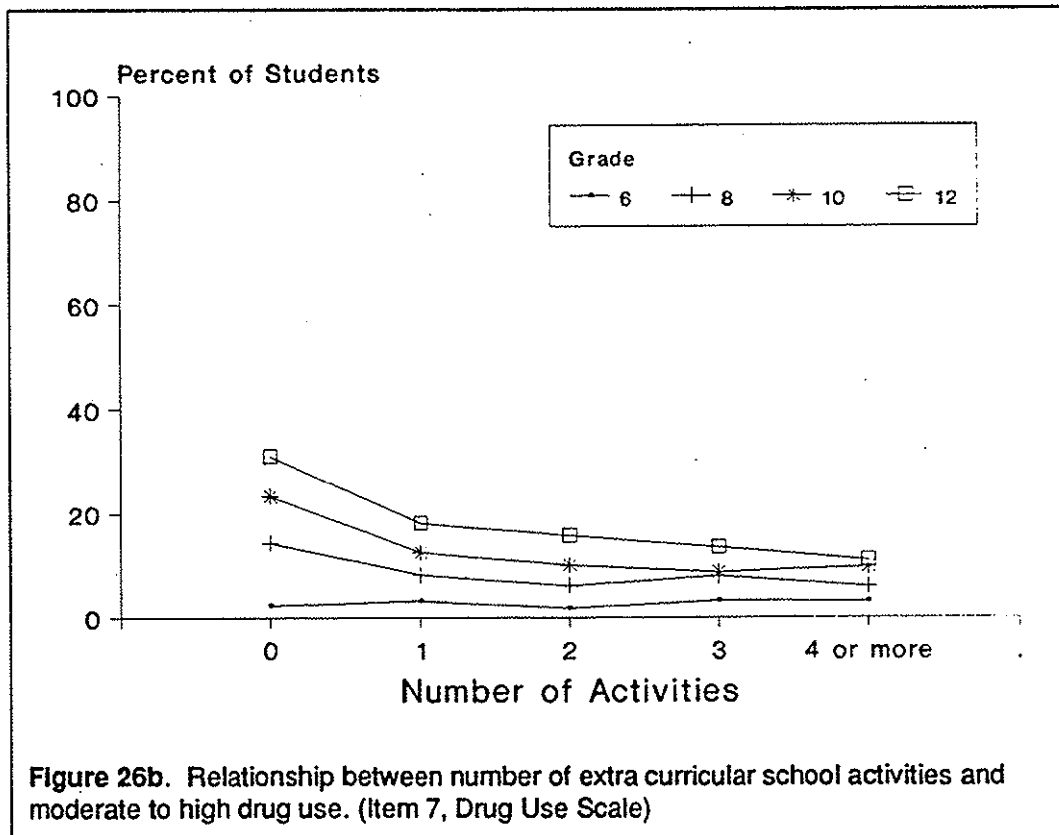
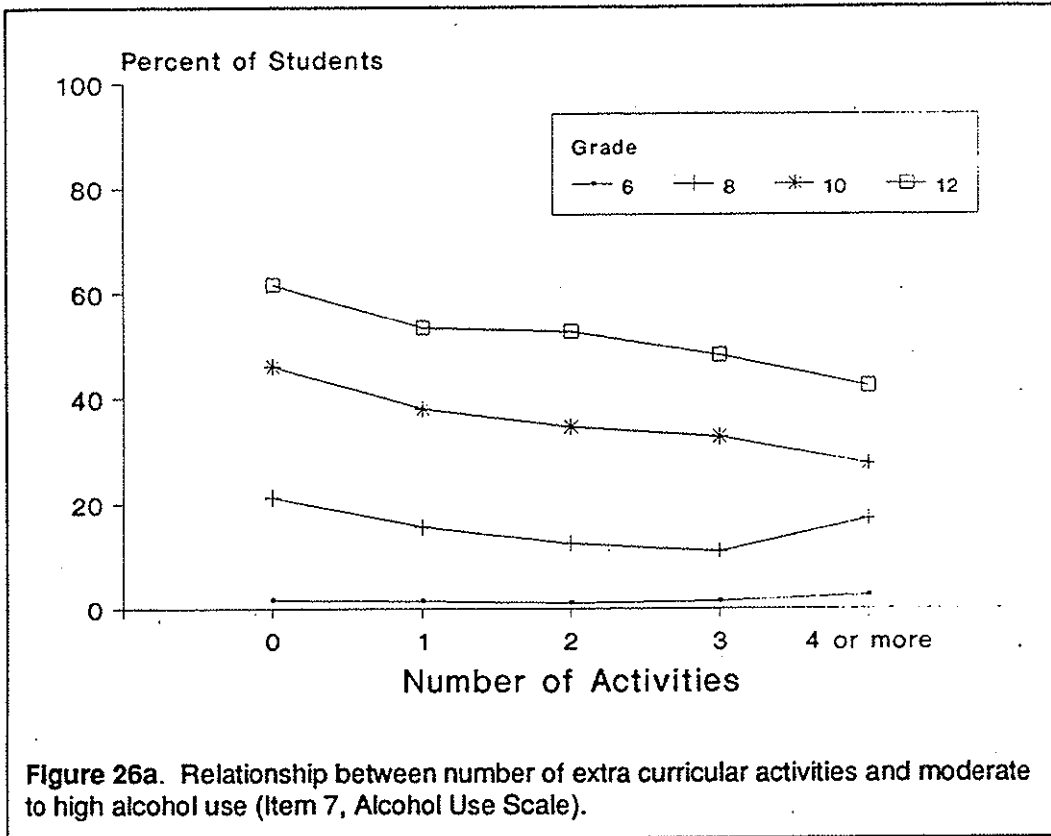
Finding: In general, students active in extra-curricular or after school activities are less likely to use alcohol or drugs. For some types of activities, such as sports, however, the pattern is not so clear.

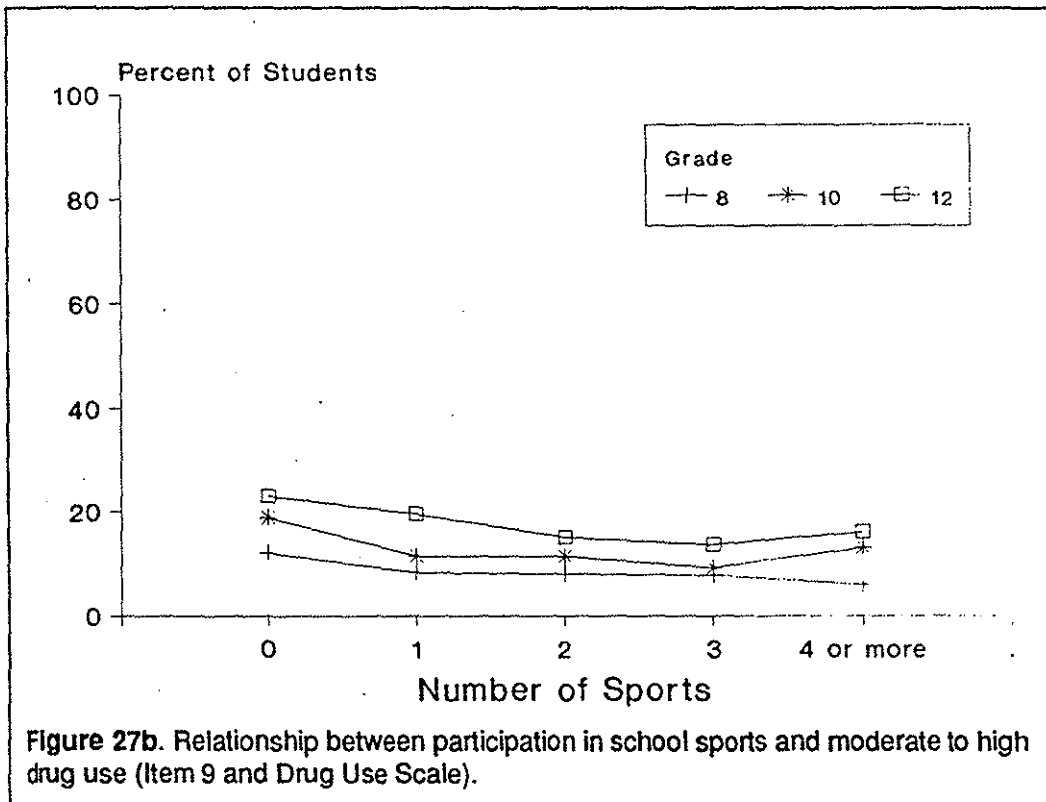
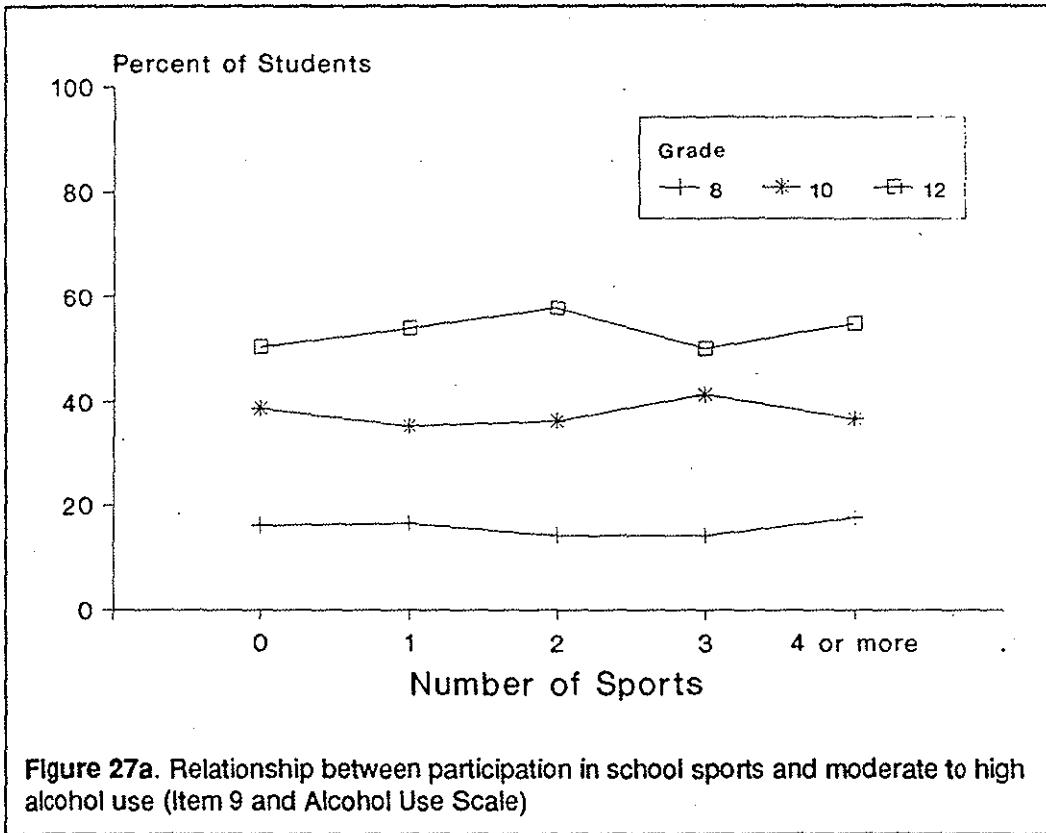
Students reported the number of extra-curricular, non-school and sports activities in which they participate. Extra curricular activities are those occurring at school such as sports, student government, music, etc. Non-school activities are those taking place outside the school setting-- Little League, Scouts, Church youth activities, etc. Students were grouped by the total number of activities in which they participate. Then the alcohol and drug use reported by each group was computed. Figure 26 reports the percent of students by grade and level of extra-curricular activity who report moderate to high use on the Alcohol Use or Drug Use scales.

In general, students active in extra-curricular activities are less likely to engage in moderate to high drug use than students who do not participate in any activities. Active students were also less likely to report moderate to high alcohol use, but a substantial proportion still report some alcohol use.

The pattern shown in Figure 26 also holds for non-school activities. That is, the more active in these activities a student is, the less likely he/she is to be using alcohol or drugs. Providing alternative drug-free activities is a popular prevention strategy, since research has indicated that one of the reasons students report they use alcohol and drugs is that there is nothing else for them to do (Tobler, 1986). The results shown in Figure 26 support this notion, but a closer look at specific types of extra-curricular activities can modify this conclusion somewhat.

In the 1990 survey, an item was added to ask specifically about the extent of participation in sports teams at school. Although this type of participation in extra-curricular activities was embedded in that earlier item (Figure 26), it was also separated to see if this type of activity showed the same pattern with alcohol and drug use. As displayed in Figure 27, it clearly does not. Although the pattern isn't entirely even at all grades, there is sufficient indication that increased participation in athletic activities, particularly with three or four sports, can be associated with higher levels of alcohol and drug use.

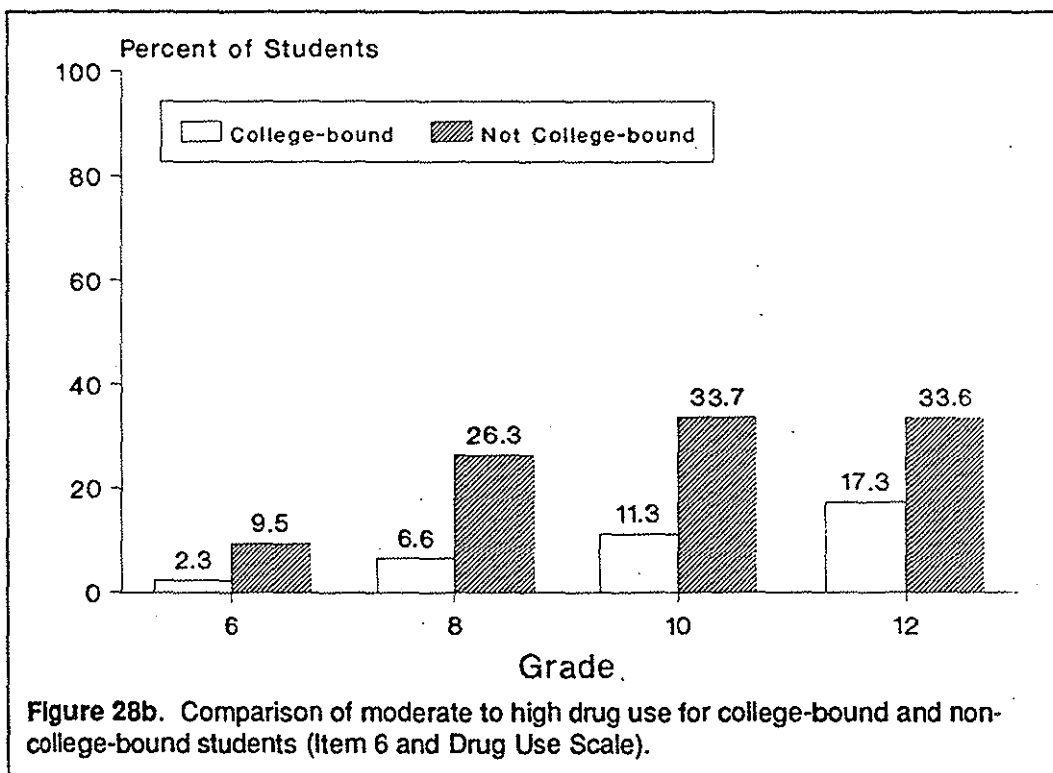
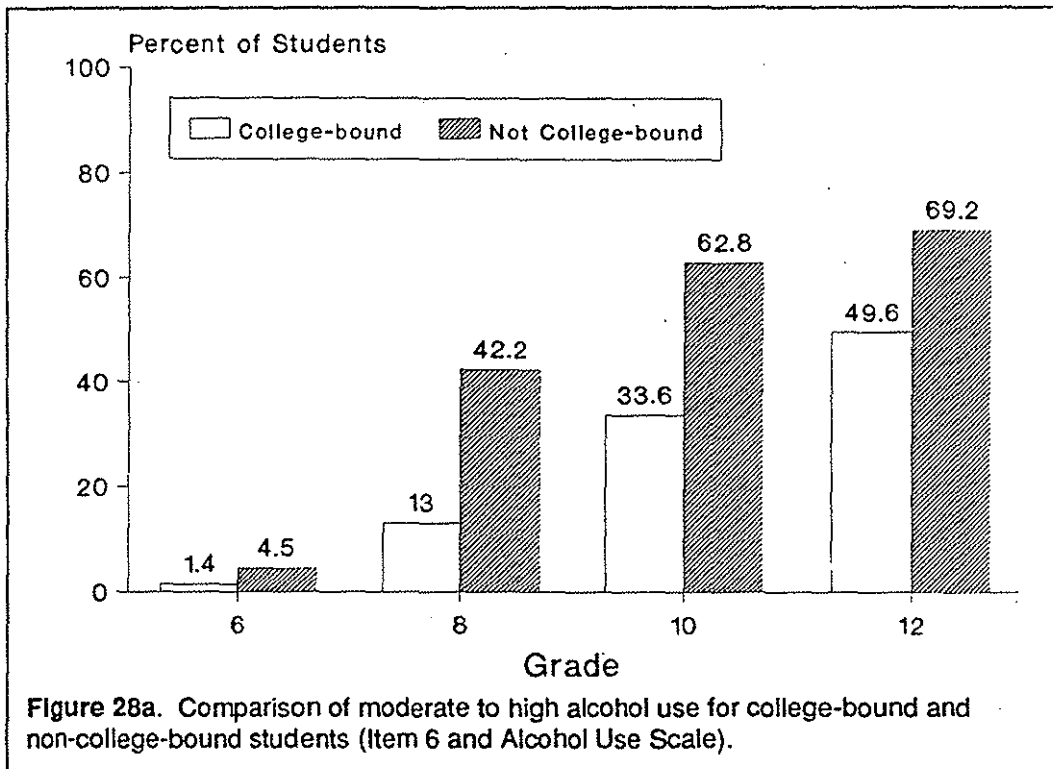




Finding: College-bound students are less likely to use alcohol or drugs.

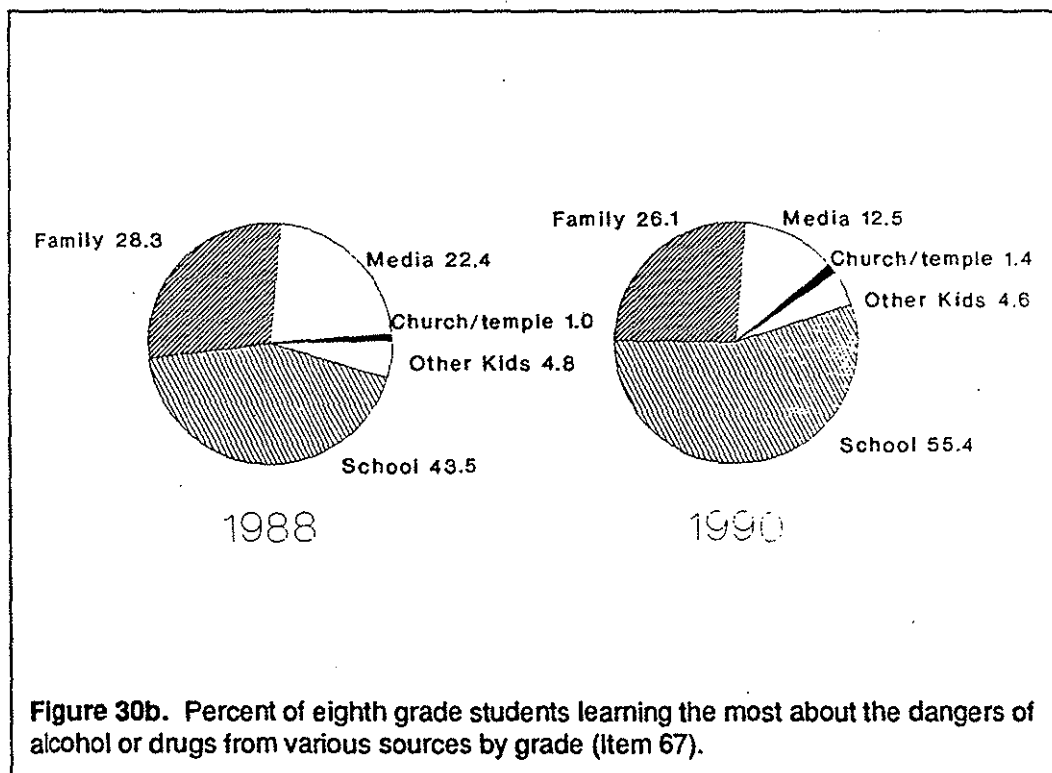
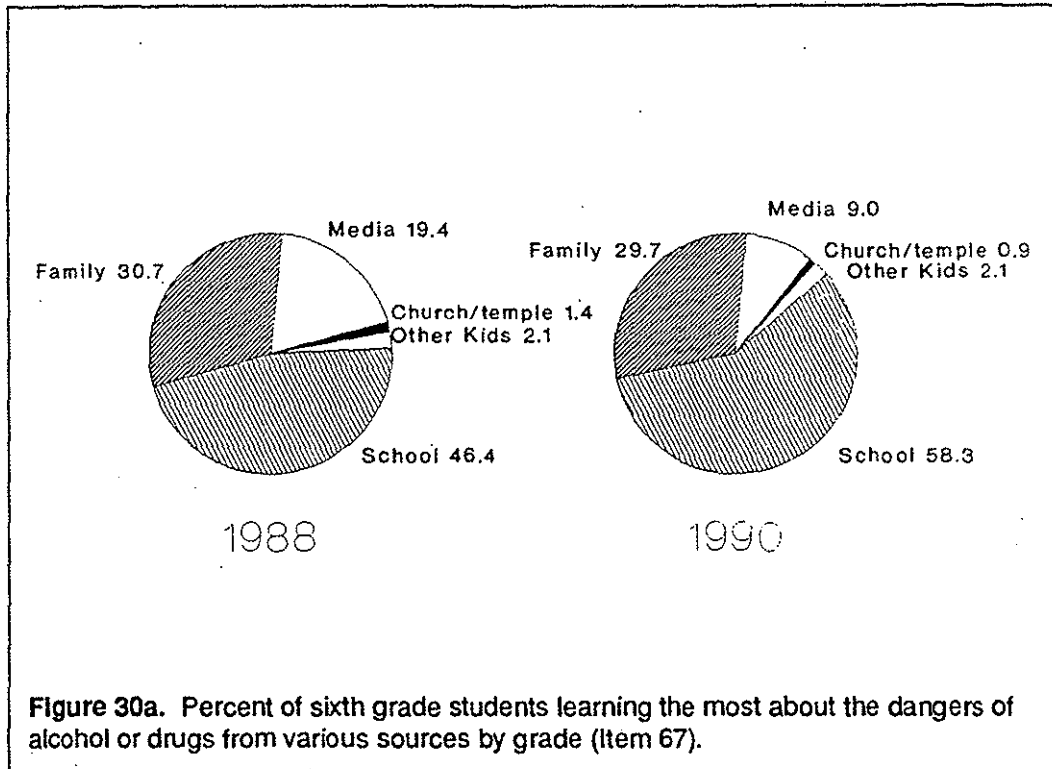
Students at each grade were grouped by whether or not they anticipated graduating from a four year college. Figure 28 compares the alcohol and drug use for the college-bound and non-college-bound groups.

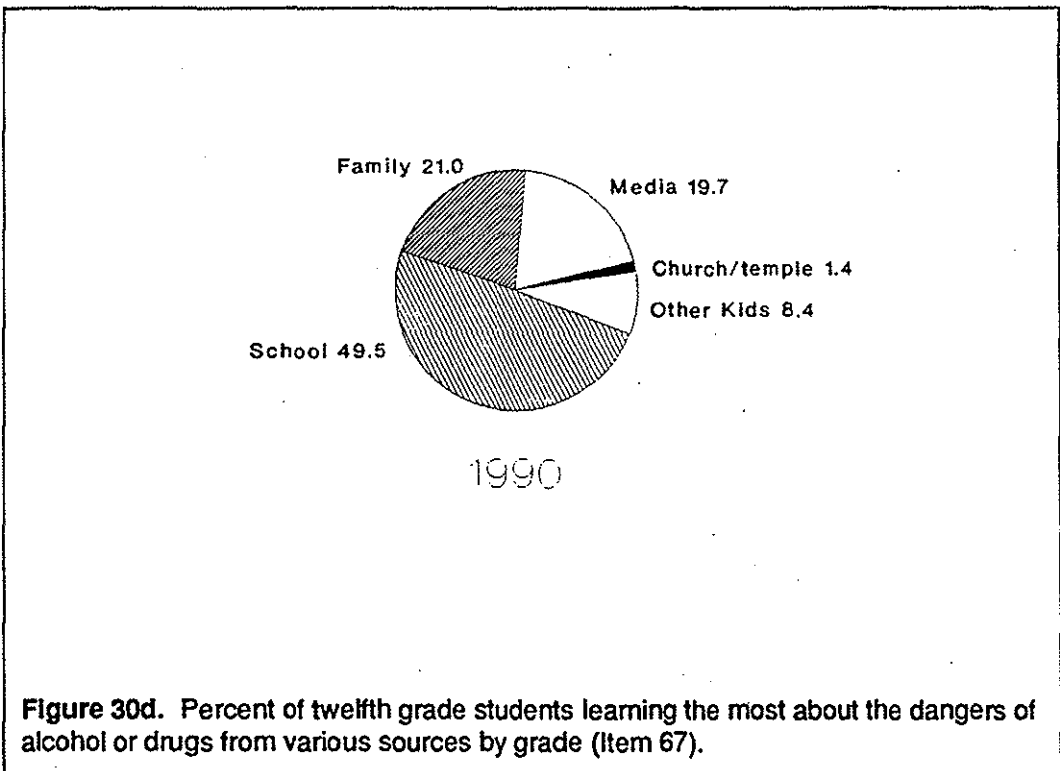
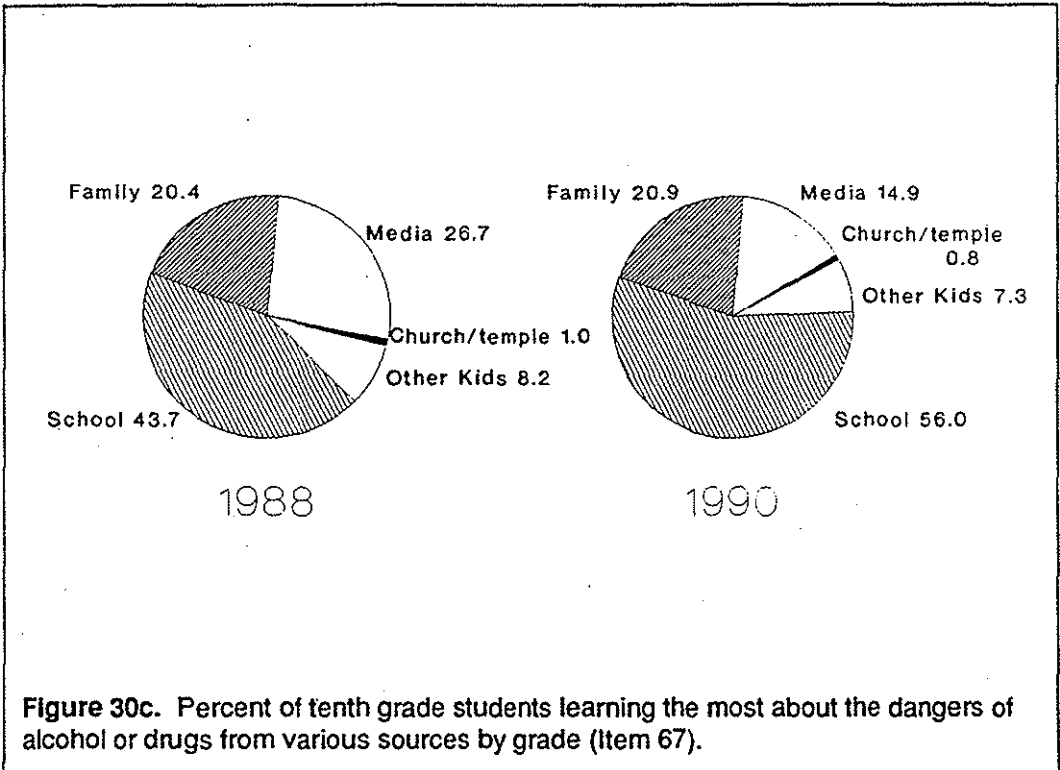
Students who anticipate going to college are much less likely to report moderate to high levels of drug use than those who do not plan to attend. A similar relationship, but not as strong, was also observed for alcohol. Surprisingly few students, however, reported that they did not anticipate graduating from a four year college. More than eighty percent of the students at each grade level indicated that they "probably" or "definitely" would attend and graduate from college.



Family was next in importance at all grades, and media third. These results are in some contrast to those of 1988 where the influences of family and the media fluctuated by grade. In the earlier survey, media influences played a larger role than family for tenth grade students. While the influence of popular media increases steadily with grade levels in the current survey, it does not surpass that of family at any grade.

A closer look at the 1988 and 1990 results shows that the percent of students reporting family as the major source of information has remained very stable within each grade (twenty to thirty percent, depending upon the grade level). The increase in students reporting school as the major source of information appears to be coming from a decrease in students reporting major influence from the popular media.





Finding: As in 1988, most students feel they have learned from their exposure to each major component of a prevention curriculum.

Students were asked how much they learned from classes at school about several components of a good prevention curriculum:

- Information about the types and effects of drugs,
- Refusal skills for saying "no" constructively when pressured to take drugs
- Decision making skills
- Positive self esteem
- Healthy alternative activities to taking drugs

A positive response to an item should signal both that the student was exposed to such lessons and that something of value was learned during those lessons.

Figure 31 shows that, in 1990 as in 1988, the vast majority of students at each grade reported learning *some* or *a lot* from each prevention curriculum component. The prevalence of *Here's Looking at You* and other comprehensive, commercially available curricula in the state probably accounts for the fact that so many students reported learning from each of these components.

High school students tended to be slightly less positive about how much they learned from each of the major components than sixth and eighth graders. This may reflect a greater cynicism among high school students, but it also suggests that these older students may have had less exposure to alcohol and drug education in elementary or middle school. The steady decline in learning about healthy alternative activities at higher grades is especially concerning, however, as this form of prevention has been shown to be particularly effective for older students (Tobler, 1986).

Seventy to eighty percent of the students at each grade feel that they have learned some or a lot about drugs and their effects, perhaps the most basic component of most prevention programs. Interestingly, however, the proportions are similar on "how to say no" to peer pressure to use alcohol or drugs. Given the well-established influence of peers on student use, this appears to be an important achievement of Washington's alcohol and drug education programs.

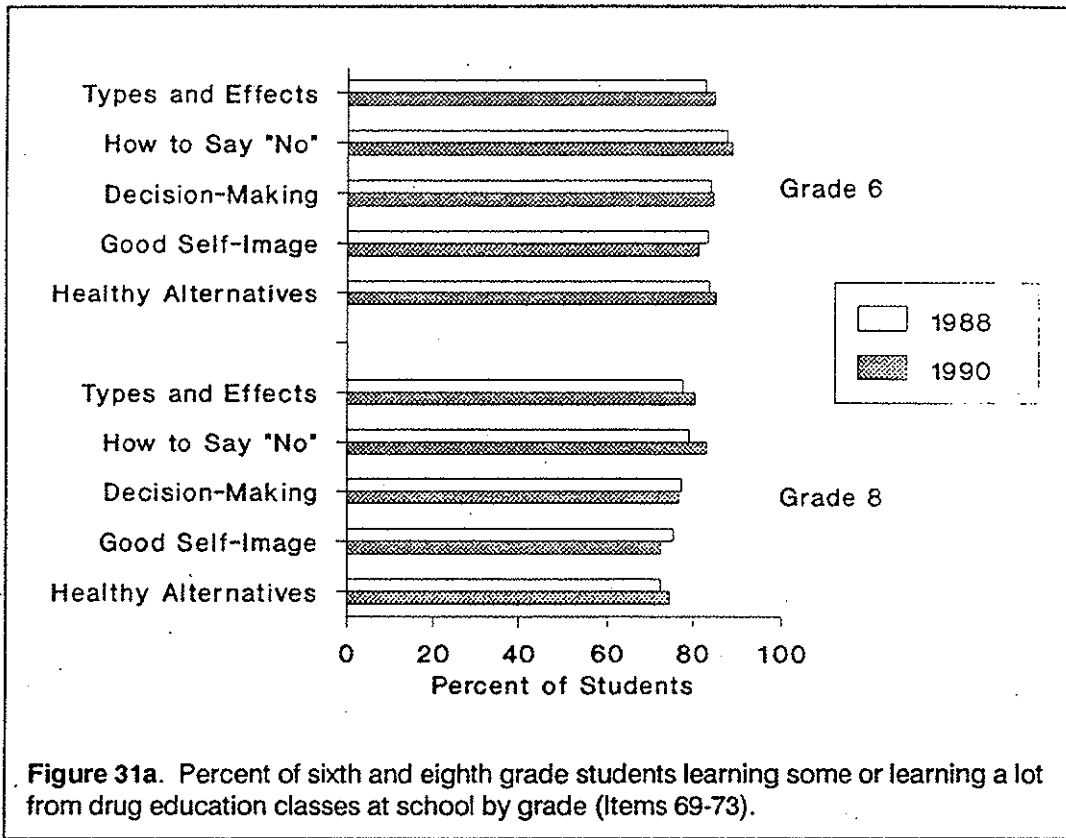


Figure 31a. Percent of sixth and eighth grade students learning some or learning a lot from drug education classes at school by grade (Items 69-73).

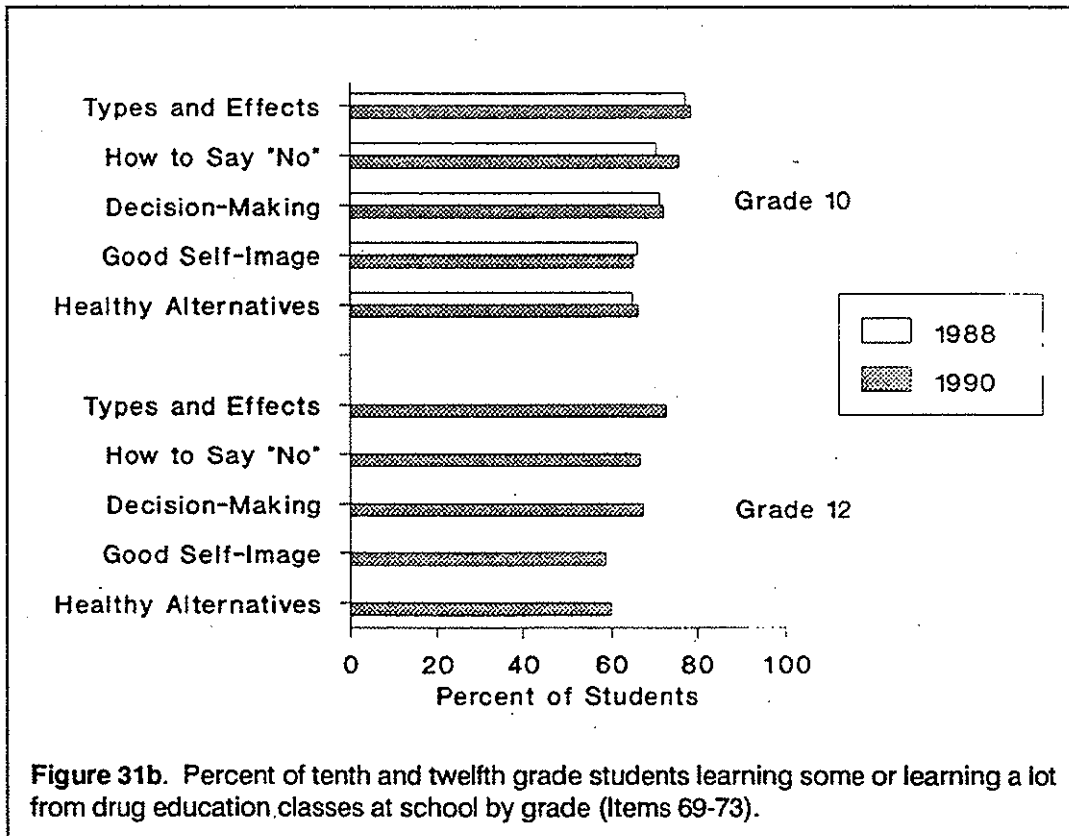


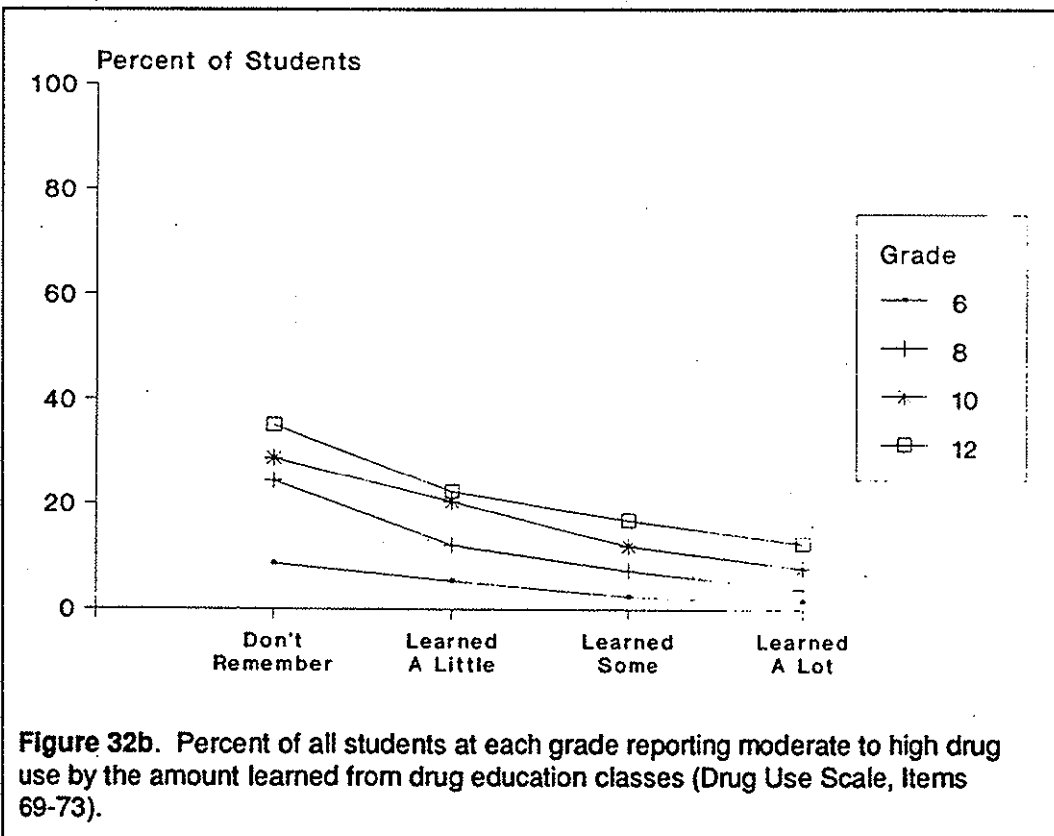
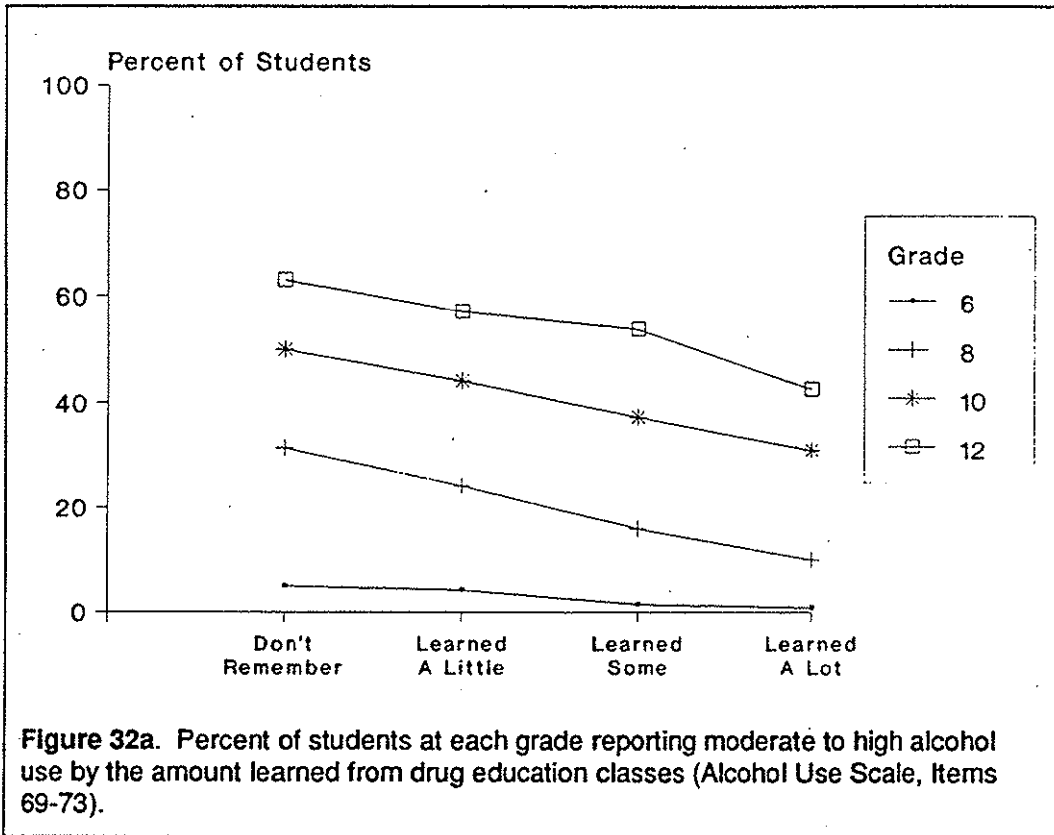
Figure 31b. Percent of tenth and twelfth grade students learning some or learning a lot from drug education classes at school by grade (Items 69-73).

Finding: Students who reported that they learned a lot from drug education were much less likely to report moderate to high alcohol or drug use.

While noting the high percentage of students at each grade who indicate they are learning a lot in school about types of drugs, refusal skills, etc., is very encouraging, the "bottom line" goal of these programs is to reduce alcohol and drug use. In Figure 32, the relationship between these reports of learning experiences in drug education and their use of alcohol and drugs is displayed. Responses to all five curriculum components were combined to form a scale of learning. Students were then grouped by amount learned across all of these. The percent of students reporting moderate to high use of alcohol or drugs for each of these groups is shown in Figure 32.

As in 1988, there continues to be a clear and strong relationship between experience with alcohol and drug education and alcohol or drug use. Students reporting that they have learned a lot are much less likely to use alcohol or other drugs than students who did not remember or learned little. For example, at eighth grade, about one-third of the students who didn't remember learning anything in drug education were moderate to high alcohol users. Of the students who indicated they had learned a lot, however, only ten percent were moderate to high alcohol users. This can be considered a nearly seventy percent reduction in the percent of students using alcohol regularly.

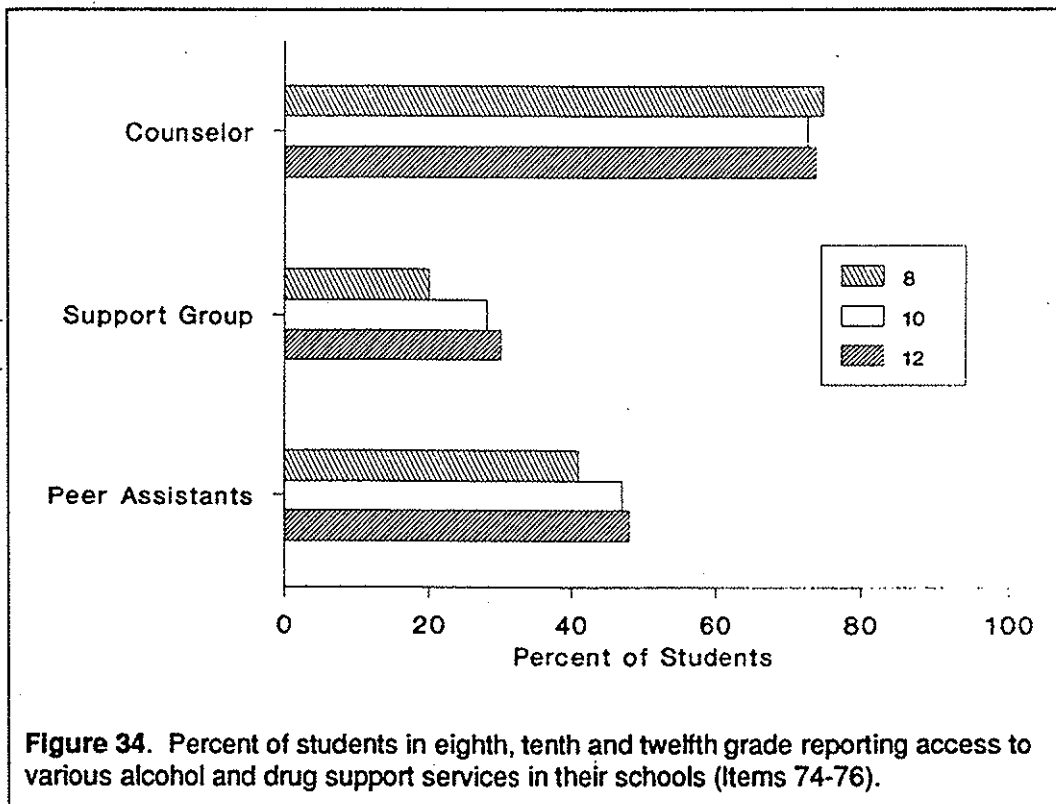
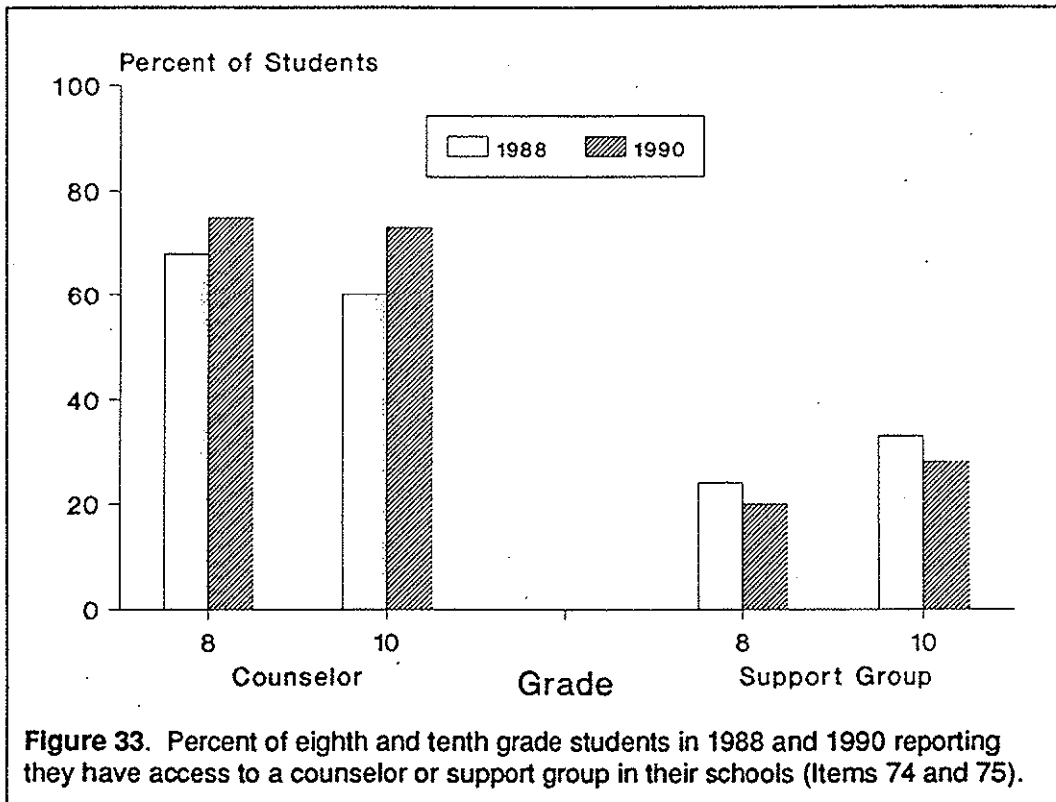
Some caution must be exercised in attributing causality from this very positive relationship, however. Students who learned more from drug education may use less as a consequence. On the other hand, students who tend not to use drugs or alcohol may simply be more inclined to listen to the "clear, non-use" message being delivered in drug education classes.



Finding: When asked about help available at school for alcohol or drug problems, most students report access to a counselor, many know of peer assistance services, but few are aware of support groups for early intervention.

As cited earlier in this report, the percent of students in Washington's schools reporting that they know of friends who may have a problem with alcohol or drug use is not declining. When asked about assistance available at their school, as shown in Figure 33, more students in eighth and tenth grade report that their school offers a counselor or other staff with whom they could discuss a drug or alcohol problem in 1990 than in 1988. While nearly three fourths of the students at these grades indicate that they have this access, only about one fourth know of support groups of students with similar concerns to theirs--a slightly lower percentage than in 1988. The current prominence of peer assistance programs is clearly demonstrated, however. The results in Figure 34 indicate that nearly one half the students at grades eight, ten and twelve know of these programs in their schools. For both support groups and peer assistant/helper services, higher proportions of students report their availability at higher grade levels.

For all three of these services, a rather large percent of students were not sure whether their schools offered them or not. For example, while only twenty to thirty percent of the students indicated their schools had support groups, forty to fifty percent said "I'm not sure." This suggests that even when help may be available, many students have not been made aware of it. Such awareness is obviously crucial and must become a prevention objective in itself.



Conclusions

The results of this survey confirm that, while a great deal of progress has been made since 1988, a serious problem still exists with substance use and abuse among public school students in Washington. This problem is not confined to the urban centers nor to minority students nor to high school students nor to any other specific group.

Use of alcohol and other drugs among peers, at parties and in school settings has not dropped appreciably since 1988. The risks of substance abuse linger for Washington's students.

On the other hand, the perception of risk students see in alcohol and drug use is increasing, particularly among older students. Perhaps the message is getting across, through the influence of schools, family and the media—in that order as reported by the students.

Amidst all of these related behaviors and attitudes, there is much indication that actual use of alcohol and drugs is going down. The good news is perhaps best for the youngest of Washington's students surveyed here. Far fewer sixth graders have begun experimenting with alcohol or drugs than was the case in 1988. This delayed onset of experimentation will pay huge dividends for Washington if current prevention efforts are sustained.

Clouding this optimism is the lack of a decline, and indeed an increase for some substances, among eighth graders. Practitioners will nod their heads, pointing to these junior high school years as the truly dangerous ones where experimentation and risk behaviors are concerned. Increased preventive efforts in these years are obviously needed.

Students themselves agree that alcohol and drug education must start early. Many feel it should begin at the third grade level or earlier. Student responses to questions on alcohol and drug education provide some assurance that drug education programs are now widely distributed in the state and that students are having positive experiences in these classes. Relationships between these experiences and low use of alcohol and drugs are especially encouraging.

Recent studies suggest that Washington is in step with other parts of the nation in beginning to gain on the war against drugs. The *Monitoring the Future* study, an annual national survey by researchers at the University of Michigan, has shown declines of 1-3 percentage points a year in drug use among high school seniors since about 1980. A recent survey in California has shown steady reductions in the use of drugs between 1986 and 1990. A similar survey in Oregon showed remarkable change between 1988 and 1990. In all cases, however, the incidence and prevalence of substance use remains at an unacceptable level.

The current study provides further information for planning prevention and intervention programs in Washington. The baseline and first point of comparison have now been established. In the coming years, periodic assessments of substance abuse will help local and state agencies continue to evaluate the effects and sharpen the focus of the continuing statewide prevention effort.

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Appendix A

Statewide Results by Grade

Alcohol and Drug Use Survey By Grade

1. Look at the bottom of this page on the right side. Which word is printed in your booklet?

	Grade 6	Grade 8	Grade 10	Grade 12
a. Elementary	98.1	3.1	1.1	1.3
b. Standard	1.9	96.9	98.9	98.7

2. Which of the following **best** describes your background? Choose only one answer. (For example, if one parent was part Asian and part White and the other parent was White, you would mark E.)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Asian	4.1	4.2	6.1	6.6
b. Black, not Hispanic	8.5	7.9	5.6	4.1
c. Hispanic	5.4	7.0	5.6	4.0
d. American Indian	6.0	3.5	2.4	1.6
e. White, not Hispanic	75.9	77.4	80.3	83.7

4. What is your sex?

	Grade 6	Grade 8	Grade 10	Grade 12
a. Female	48.9	51.3	51.5	49.0
b. Male	51.1	48.7	48.5	51.0

5. How much school do you miss?

	Grade 6	Grade 8	Grade 10	Grade 12
a. I never miss school.	11.7	8.7	8.6	7.0
b. Hardly ever miss school.	54.3	41.8	38.3	29.8
c. Miss 2-3 days a semester	24.9	32.9	34.4	32.6
d. Miss some every month .	8.0	14.4	15.9	26.0
e. Miss some every week .	1.0	2.2	2.8	4.6

6. How likely is it that you will graduate from college (four-year program)?

	Grade 6	Grade 8	Grade 10	Grade 12
a. Definitely won't	1.4	3.1	3.4	6.4
b. Probably won't	4.4	8.8	10.3	13.3
c. Probably will	51.3	43.1	42.0	33.3
d. Definitely will	42.9	45.0	44.4	47.0

7. How many extra school activities do you participate in regularly (for example: sports, music, student government, clubs)?

	Grade 6	Grade 8	Grade 10	Grade 12
a. None	26.3	24.5	25.4	26.2
b. 1	28.8	26.2	26.1	24.8
c. 2	20.8	23.3	23.6	20.6
d. 3	11.9	15.0	14.5	13.8
e. 4 or more	12.2	11.0	10.3	14.7

8. How many non-school activities do you participate in regularly (for example, Little League, Scouts, Church youth)?

	Grade 6	Grade 8	Grade 10	Grade 12
a. None	30.4	33.8	35.4	36.5
b. 1	30.0	33.1	34.7	33.3
c. 2	17.9	18.6	16.9	17.8
d. 3	9.7	7.6	6.7	6.4
e. 4 or more	12.0	6.9	6.3	6.1

9. How many different school sports teams have you participated on in the last two school years (for example, football, soccer, volleyball, basketball, track, swim team)?

	Grade 8	Grade 10	Grade 12
a. None	29.5	31.5	40.1
b. 1	21.9	24.7	25.6
c. 2	17.6	19.1	18.1
d. 3	13.0	11.2	8.6
e. 4 or more	18.0	13.4	7.6

10. In the last year have you ever thought about dropping out of school?

	Grade 8	Grade 10	Grade 12
a. Never thought about it	75.9	70.0	67.6
b. Thought, not seriously	20.6	25.2	26.0
c. Seriously thought about it	3.5	4.8	6.4

11. How many times have you changed schools in the last 12 months?

	Grade 6	Grade 8	Grade 10	Grade 12
a. None (same school)	74.4	81.2	76.7	86.9
b. 1 time	19.4	14.0	18.8	10.0
c. 2 times	3.2	2.9	2.7	2.0
d. 3 or more times	3.1	1.9	1.8	1.2

12. When you are away from home, do your parents know where you are and who you are with?

	Grade 8	Grade 10	Grade 12
a. Every time	36.1	26.0	17.9
b. Most times	43.8	51.4	49.5
c. Sometimes	14.6	16.5	23.4
d. Rarely	4.0	4.8	7.3
e. Never	1.5	1.3	2.0

The following questions ask about problems with drugs or alcohol (beer, wine, or liquor).

13. Do you think there is a drug or alcohol problem among kids attending your school?

	Grade 6	Grade 8	Grade 10	Grade 12
a. Yes, a lot of kids...	3.0	16.1	36.7	40.5
b. Yes, some kids...	13.5	40.9	47.6	45.1
c. No, only a few kids...	35.1	35.9	14.2	13.1
d. No, no one.	48.3	7.1	1.4	1.3

14. Do you think there is drug or alcohol use during the school day at your school?	Grade 8	Grade 10	Grade 12
a. Yes, alcohol	8.7	9.4	7.9
b. Yes, drugs	13.6	16.8	15.0
c. Yes, both	25.6	45.9	50.6
d. No	52.1	27.9	26.4

15. Is there drinking or drug use among kids at most parties you attend?	Grade 6	Grade 8	Grade 10	Grade 12
a. Yes, alcohol	4.7	20.0	35.1	36.2
b. Yes, drugs	29.5	22.5	9.8	4.9
c. Yes, both	2.5	10.6	24.7	34.2
d. No	43.1	25.0	9.7	6.2
e. I don't attend parties	20.4	20.7	18.5	

16. Have you ever gotten into trouble at home or at school because of your drinking or drug use?	Grade 6	Grade 8	Grade 10	Grade 12
a. I don't drink or use drugs	70.1	63.7	47.8	36.6
b. No, never	26.5	26.2	35.0	39.2
c. Once or twice	2.5	7.9	14.7	20.4
d. Many times	.9	2.2	2.4	3.9

17. Have you ever been arrested because of drinking or using drugs?	Grade 8	Grade 10	Grade 12
a. I don't drink or use drugs	62.7	47.4	36.1
b. No, never	34.0	48.8	56.6
c. Once or twice	2.0	3.0	6.2
d. Many times	1.3	.7	1.2

18. Are you aware of someone close to you (those you live with or a friend) who has a drinking or drug problem?	Grade 6	Grade 8	Grade 10	Grade 12
a. Yes, someone I live with	12.6	10.1	8.9	6.9
b. Yes, a friend	14.7	32.8	42.9	47.8
c. Yes, both...	3.5	7.7	9.4	9.6
d. No, no one	69.3	49.4	38.8	35.8

How difficult do you think it would be for you to get each of the following types of drugs?

19. Marijuana or hashish (grass, hash, pot)	Grade 6	Grade 8	Grade 10	Grade 12
a. Probably impossible	54.1	22.5	9.2	5.8
b. Very difficult	19.9	17.9	8.9	5.6
c. Fairly difficult	9.9	20.5	14.9	11.6
d. Fairly easy	9.5	24.2	37.0	39.2

20. Cocaine (coke, crack, snow)	Grade 8	Grade 10	Grade 12
a. Probably impossible	33.2	16.9	11.5
b. Very difficult	22.9	20.1	18.1
c. Fairly difficult	23.3	28.7	28.4
d. Fairly easy	14.7	26.6	31.6

21. Crystallized Methamphetamines (crystal meth, ice)

	Grade 8	Grade 10	Grade 12
a. Probably impossible	44.8	26.9	22.1
b. Very difficult	26.7	28.0	27.4
c. Fairly difficult	17.2	27.6	28.3
d. Fairly easy	7.6	13.2	16.7

22. Powdered Methamphetamines (meth, speed, crank)

	Grade 8	Grade 10	Grade 12
a. Probably impossible	35.6	18.3	15.7
b. Very difficult	22.6	19.6	18.6
c. Fairly difficult	18.8	24.3	24.3
d. Fairly easy	14.5	24.5	26.8

For questions 23 to 39, please mark how often you use each type of drug. Some other names for each drug are given in parentheses.

23. Smoking tobacco (cigarettes, cigars, pipes)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	88.7	67.5	56.6	48.3
b. Some	9.8	20.3	25.1	27.3
c. Monthly	.6	3.0	4.7	5.6
d. Weekly	.4	2.4	3.1	3.8
e. Daily	.4	6.8	10.5	15.1

24. Smokeless tobacco (chew, plug, snuff)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	94.6	86.1	77.9	71.5
b. Some	4.3	9.5	14.2	18.3
c. Monthly	.4	1.7	3.0	2.8
d. Weekly	.4	1.0	2.0	2.4
e. Daily	.2	1.7	2.9	4.9

25. Beer

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	76.6	51.5	34.7	24.7
b. Some	21.7	35.7	37.7	35.5
c. Monthly	1.1	7.3	15.7	20.6
d. Weekly	.5	5.0	10.9	18.1
e. Daily	.1	.6	1.0	1.2

26. Wine or wine coolers

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	75.0	46.8	31.4	23.7
b. Some	23.3	40.3	43.4	43.5
c. Monthly	1.1	7.8	16.3	23.0
d. Weekly	.4	4.6	8.0	9.2
e. Daily	.1	.6	.9	.6

27. Hard liquor (whiskey, gin, vodka, mixed drinks)				
	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	91.6	68.5	46.5	33.9
b. Some	7.5	22.7	34.5	40.7
c. Monthly	.7	5.6	12.8	18.1
d. Weekly	.1	2.9	5.7	6.7
e. Daily	.1	.4	.6	.6
28. Marijuana or hashish (grass, hash, pot)				
	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	98.3	88.8	78.5	66.0
b. Some	1.4	6.3	13.4	21.3
c. Monthly	.1	2.0	4.3	5.9
d. Weekly	.1	2.0	2.6	4.3
e. Daily	.1	1.0	1.2	2.6
29. Cocaine (snow, coke, crack)				
	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	99.1	96.6	95.7	92.2
b. Some	.6	2.1	3.2	6.0
c. Monthly	.1	.9	.6	1.1
d. Weekly	.2	.3	.2	.4
e. Daily	.1	.1	.3	.3
30. Derbisol (empathan, antagonil)				
	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	99.7	98.4	98.5	98.6
b. Some	.3	1.2	1.3	1.1
c. Monthly	.0	.4	.2	.3
d. Weekly				
e. Daily				
31. Opiates (heroin, morphine, codeine)				
	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	98.6	96.2	93.5	92.4
b. Some	1.2	2.7	5.4	6.2
c. Monthly	.2	.4	.7	1.1
d. Weekly	.0	.3	.2	.1
e. Daily	.0	.4	.2	.1
32. Depressants (quaaludes, ludes, downers, reds)				
	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	99.2	95.4	94.8	95.3
b. Some	.7	2.9	4.0	3.6
c. Monthly	.1	.9	.7	.6
d. Weekly	.0	.6	.4	.4
e. Daily	.0	.2	.1	.2

33. Tranquilizers (Valium, Librium)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	99.3	96.3	94.5	94.9
b. Some	.7	2.3	4.5	4.2
c. Monthly	.0	.7	.6	.5
d. Weekly	.0	.6	.3	.2
e. Daily		.2	.2	.1

34. Hallucinogens (angel dust, LSD, acid, microdot, PCP, magic mushrooms)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	99.2	94.3	90.9	86.3
b. Some	.6	3.3	5.9	9.5
c. Monthly	.1	1.3	1.6	2.9
d. Weekly	.1	.7	1.3	1.0
e. Daily	.0	.4	.3	.4

35. Inhaled substances to get high (glue, gasoline, paint thinner, spray cans, white-out, snappers, poppers, rush)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	92.5	82.9	82.3	83.6
b. Some	6.7	13.3	15.0	14.2
c. Monthly	.4	1.7	1.6	1.0
d. Weekly	.2	1.5	.6	.4
e. Daily	.2	.7	.5	.8

36. Crystal Methamphetamine (crystal meth, ice)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	99.1	97.0	96.9	95.7
b. Some	.6	1.6	2.0	3.2
c. Monthly	.1	1.0	.6	.8
d. Weekly	.1	.3	.3	.3
e. Daily	.1	.0	.2	.1

37. Other illegal stimulants (uppers, amphetamines, meth, crank, speed, dexedrine)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	99.1	94.2	90.1	86.9
b. Some	.7	3.9	7.5	10.4
c. Monthly	.1	.9	1.4	1.8
d. Weekly	.1	.6	.7	.7
e. Daily	.0	.4	.4	.2

38. Drugs purchased from the drugstore to get high (diet pills like Dexatrim, stay awake pills like NoDoz or Vivarin, pep pills, Nyquil or other cough medicines)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	93.0	86.2	76.8	72.8
b. Some	5.8	9.7	17.4	21.3
c. Monthly	.9	2.3	3.9	4.0
d. Weekly	.2	1.0	1.2	1.3
e. Daily	.1	.7	.6	.6

39. Steroids (muscle builders)

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never	98.8	97.3	97.0	96.8
b. Some	.9	1.4	1.8	1.8
c. Monthly	.1	.4	.4	.2
d. Weekly	.1	.4	.2	.3
e. Daily	.1	.5	.5	.8

How often have you used each of the following drugs in the past 30 days:

40. Cigarettes

	Grade 6	Grade 8	Grade 10	Grade 12
a. None	97.6	87.9	84.5	79.3
b. up to 5 per day	1.9	7.0	8.6	9.6
c. 1/2 pack per day	.3	2.6	3.7	5.7
d. 1 pack per day	.1	1.6	2.5	4.0
e. more than 1 pack per day	.1	1.0	.7	1.5

41. Alcohol (beer, wine, wine coolers, hard liquor)

	Grade 6	Grade 8	Grade 10	Grade 12
a. None	88.2	70.9	56.0	48.0
b. 1-2 times	9.0	18.2	25.3	25.7
c. 3-5 times	1.6	6.0	11.9	14.8
d. 6-9 times	.5	2.0	3.2	6.0
e. 10 or more	.7	2.8	3.6	5.4

42. Marijuana or hashish (grass, hash, pot)

	Grade 6	Grade 8	Grade 10	Grade 12
a. None	98.7	92.4	89.4	84.1
b. 1-2 times	.7	4.3	5.3	6.9
c. 3-5 times	.2	1.3	2.1	3.0
d. 6-9 times	.1	1.2	1.1	1.7
e. 10 or more	.2	.9	2.1	4.2

43. Cocaine (coke, crack, snow)

	Grade 8	Grade 10	Grade 12
a. None	96.9	97.9	97.4
b. 1-2 times	1.9	1.1	1.2
c. 3-5 times	.5	.5	.5
d. 6-9 times	.5	.2	.4
e. 10 or more	.3	.4	.6

44. Other illegal drugs (see 30 to 37 above)

	Grade 8	Grade 10	Grade 12
a. None	94.6	92.8	93.2
b. 1-2 times	3.0	4.1	3.5
c. 3-5 times	1.0	1.4	1.6
d. 6-9 times	.8	.8	.8
e. 10 or more	.6	.9	.9

How many of your closest friends use each of the following drugs once a month or more often:

45. Smoke cigarettes

	Grade 6	Grade 8	Grade 10	Grade 12
a. None	82.0	53.3	39.2	32.3
b. A few	11.8	25.9	29.7	28.8
c. Some	3.5	10.7	16.1	19.1
d. Most	1.5	7.9	11.8	16.3
e. All	1.2	2.2	3.2	3.6

46. Drink alcohol (beer, wine, wine coolers, hard liquor)

	Grade 6	Grade 8	Grade 10	Grade 12
a. None	81.2	46.2	22.5	14.0
b. A few	13.5	27.5	27.3	24.0
c. Some	3.5	14.4	20.8	22.8
d. Most	1.2	9.5	23.1	29.8
e. All	.5	2.4	6.3	9.3

47. Smoke marijuana or hashish (grass, hash, pot)

	Grade 8	Grade 10	Grade 12
a. None	77.6	60.8	49.3
b. A few	13.2	23.0	26.3
c. Some	5.0	9.7	14.6
d. Most	3.3	4.8	7.5
e. All	.9	1.6	2.3

48. Take other illegal drugs

	Grade 8	Grade 10	Grade 12
a. None	82.2	70.4	63.6
b. A few	11.5	19.8	23.7
c. Some	3.4	6.4	8.4
d. Most	2.2	2.7	3.3
e. All	.7	.8	.9

The following questions ask about alcohol use and cigarette use.

49. How do you usually get the beer, wine, or liquor you drink?

	Grade 6	Grade 8	Grade 10	Grade 12
a. I don't drink	93.2	61.9	43.0	32.6
b. From home, my parents know	3.2	10.5	8.7	7.4
c. Home, parents don't know	1.2	6.7	4.7	1.5
d. From friends	2.1	17.3	34.8	43.8
e. Ask adults or buy myself	.3	3.6	8.9	14.6

50. How much do you usually drink at one time?

	Grade 6	Grade 8	Grade 10	Grade 12
a. I don't drink	86.1	60.4	41.8	31.7
b. Less than one can or glass	10.9	16.9	10.9	6.7
c. One can or glass...	1.7	8.1	10.6	9.3
d. 2-4 cans or glasses	.8	7.1	17.6	25.2
e. 5 or more cans or glasses	.4	7.6	19.0	27.1

51. How old were you when you had your first full drink (a can of beer, a full glass of wine, or a mixed drink)?

	Grade 6	Grade 8	Grade 10	Grade 12
a. Never had a full drink	77.2	54.0	31.3	19.0
b. 10 or younger	15.9	14.9	12.9	11.5
c. 11 or 12	6.3	19.2	17.6	14.1
d. 13 or 14	.4	11.3	28.1	26.3
e. 15 or older	.1	.7	10.1	29.1

52. Think back over the last two weeks. How many times have you had five or more drinks in a row? (A drink is a glass of wine, a bottle of beer, a shot glass of liquor, or a mixed drink.)

	Grade 6	Grade 8	Grade 10	Grade 12
a. None	96.0	87.2	79.8	72.2
b. Once	2.7	6.3	8.9	11.8
c. Twice	.6	2.9	5.4	7.8
d. 3 to 5 times	.4	1.7	3.4	5.5
e. 6 or more times	.2	1.9	2.5	2.7

53. How many drinks does it take for you to get drunk when you drink?

	Grade 8	Grade 10	Grade 12
a. I don't get drunk.	71.6	51.2	37.4
b. 2 or fewer	4.5	4.5	4.7
c. 3 or 4	8.0	16.5	18.8
d. 5 or 6	7.1	16.4	22.5
e. 7 or more	8.6	11.4	16.6

54. Have you ever used drugs and alcohol together?

	Grade 8	Grade 10	Grade 12
a. I don't drink or use drugs	64.0	44.9	32.8
b. No, never	26.4	39.3	40.5
c. Once or twice	6.2	10.7	16.5
d. Many times	3.4	5.1	10.2

55. How old were you when you smoked your first cigarette?

	Grade 6	Grade 8	Grade 10	Grade 12
a. I have never smoked	83.7	61.6	50.4	43.2
b. 10 or younger	11.4	18.1	15.8	13.8
c. 11 or 12	4.5	12.9	15.7	14.8
d. 13 or 14	.3	7.0	13.7	15.1
e. 15 or older	.1	.5	4.4	13.0

56. How do you usually get the cigarettes you smoke?

	Grade 6	Grade 8	Grade 10	Grade 12
a. I don't smoke	94.4	72.0	67.5	64.5
b. From adults	.8	5.5	4.3	2.0
c. From friends	3.7	14.6	13.0	8.9
d. From a vending machine	.5	2.2	1.4	1.5
e. From a store	.6	5.7	13.7	23.1

How much do you think people risk harming themselves if they:

57. Smoke one or more packs of cigarettes a day

	Grade 6	Grade 8	Grade 10	Grade 12
a. No risk	9.2	5.1	1.8	1.8
b. Slight risk	9.5	7.9	5.8	3.9
c. Moderate risk	24.5	31.7	28.0	24.6
d. Great risk	39.3	43.8	57.1	65.6
e. Not sure	17.5	11.4	7.3	4.0

58. Smoke marijuana occasionally

	Grade 6	Grade 8	Grade 10	Grade 12
a. No risk	9.1	5.3	3.5	3.8
b. Slight risk	5.6	8.4	10.9	12.9
c. Moderate risk	21.5	29.7	31.9	34.5
d. Great risk	50.5	47.1	47.9	44.8
e. Not sure	13.3	9.4	5.8	4.0

59. Try heroin once or twice

	Grade 8	Grade 10	Grade 12
a. No risk	5.6	2.4	2.1
b. Slight risk	11.9	11.2	9.5
c. Moderate risk	24.8	20.9	20.3
d. Great risk	44.7	56.8	61.5
e. Not sure	13.0	8.6	6.5

60. Try cocaine once or twice

	Grade 8	Grade 10	Grade 12
a. No risk	5.3	2.4	2.4
b. Slight risk	9.1	8.5	8.0
c. Moderate risk	21.5	19.0	18.9
d. Great risk	52.3	62.9	65.4
e. Not sure	11.6	7.1	5.3

61. Have five or more drinks once or twice each weekend

	Grade 6	Grade 8	Grade 10	Grade 12
a. No risk	10.3	7.8	4.5	4.3
b. Slight risk	17.1	16.3	16.8	17.6
c. Moderate risk	31.5	32.6	36.3	35.8
d. Great risk	26.0	33.2	36.5	38.1
e. Not sure	15.0	10.1	5.9	4.2

62. What is the risk of getting AIDS from injecting drugs with a needle that a someone else has used?

	Grade 8	Grade 10	Grade 12
a. No risk	4.5	1.4	1.2
b. Slight risk	1.9	1.8	1.8
c. Moderate risk	11.3	10.8	9.7
d. Great risk	74.6	79.4	83.4
e. Not sure	7.7	6.6	3.9

How would your parents feel about your doing each of the following:

63. Smoking marijuana occasionally

	Grade 8	Grade 10	Grade 12
a. Approve	2.6	1.3	1.9
b. Not disapprove	2.8	2.8	3.9
c. Disapprove	7.6	10.7	13.4
d. Greatly disapprove	87.0	85.2	80.8

64. Having one or two drinks nearly every day

	Grade 8	Grade 10	Grade 12
a. Approve	2.7	1.4	1.7
b. Not disapprove	3.9	3.8	3.8
c. Disapprove	13.8	15.3	18.9
d. Greatly disapprove	79.6	79.5	75.5

65. Having five or more drinks once or twice each weekend

	Grade 8	Grade 10	Grade 12
a. Approve	3.2	1.7	2.6
b. Not disapprove	4.7	5.5	9.3
c. Disapprove	12.3	16.4	20.5
d. Greatly disapprove	79.8	76.4	67.6

66. Attending a party in a friend's home where beer, wine, or liquor were available to you

	Grade 8	Grade 10	Grade 12
a. Approve	4.6	4.7	7.3
b. Not disapprove	10.8	16.6	27.7
c. Disapprove	23.3	32.5	33.6
d. Greatly disapprove	61.3	46.2	31.4

The next questions ask about drug education.

67. Where have you learned the most about the dangers of drugs and drinking?

	Grade 6	Grade 8	Grade 10	Grade 12
a. Family/people I live with	29.7	26.1	20.9	21.0
b. School	58.3	55.4	56.0	49.5
c. Other kids	2.1	4.6	7.3	8.4
d. Church or temple	.9	1.4	.8	1.4
e. TV, movies, or newspaper	9.0	12.5	14.9	19.7

68. At what grade level do you think alcohol and drug education should begin?

	Grade 6	Grade 8	Grade 10	Grade 12
a. 3rd or earlier	46.9	40.7	38.8	38.3
b. 4th or 5th	31.5	36.9	35.8	33.2
c. 6th, 7th, or 8th	11.8	17.3	21.3	25.3
d. 9th or 10th	3.2	2.1	2.5	2.0
e. 11th or 12th	6.6	3.0	1.6	1.3

How much have you learned in classes at school about each of the following:

69. Types of drugs and what drugs do to people

	Grade 6	Grade 8	Grade 10	Grade 12
a. Don't remember	6.8	7.4	6.5	6.3
b. Learned a little	8.2	12.2	14.8	20.8
c. Learned some	26.9	36.1	40.7	43.6
d. Learned a lot	58.1	44.3	38.0	29.3

70. How to say "no" to kids who want you to use drugs or alcohol

	Grade 6	Grade 8	Grade 10	Grade 12
a. Don't remember	5.0	6.1	7.2	9.4
b. Learned a little	6.0	10.7	16.9	24.0
c. Learned some	13.6	24.5	33.3	36.6
d. Learned a lot	75.3	58.7	42.6	30.0

71. How to make good decisions in life

	Grade 6	Grade 8	Grade 10	Grade 12
a. Don't remember	6.4	7.8	8.5	8.9
b. Learned a little	8.9	15.4	19.1	23.8
c. Learned some	26.3	33.9	37.1	37.9
d. Learned a lot	58.3	42.9	35.2	29.4

72. How to feel good about yourself

	Grade 6	Grade 8	Grade 10	Grade 12
a. Don't remember	7.2	10.4	11.5	12.7
b. Learned a little	11.6	17.2	23.4	28.6
c. Learned some	26.6	32.7	34.5	34.7
d. Learned a lot	54.6	39.7	30.6	24.0

73. Healthy things to do rather than take drugs or drink alcohol

	Grade 6	Grade 8	Grade 10	Grade 12
a. Don't remember	6.0	10.9	11.8	13.7
b. Learned a little	8.8	14.7	22.0	26.4
c. Learned some	23.1	28.6	33.1	35.1
d. Learned a lot	62.1	45.9	33.1	24.8

If you or a friend had a problem with alcohol or drugs, does your school provide:

74. A counselor or other school staff to discuss the problem

	Grade 8	Grade 10	Grade 12
a. Yes	74.9	73.2	73.5
b. No	6.7	4.5	6.2
c. I'm not sure	18.4	22.3	20.3

75. A support group (or rap group) of students with similar concerns

	Grade 8	Grade 10	Grade 12
a. Yes	20.1	28.4	30.0
b. No	32.8	20.1	28.0
c. I'm not sure	47.1	51.4	42.0

76. Students to talk to who have been trained to assist students with problems and to refer them to help. These may be called Peer Assistants, Peer Counselors, Natural Helpers, Peer Helpers, or Peer Listeners.

	Grade 8	Grade 10	Grade 12
a. Yes	40.8	47.1	48.4
b. No	22.7	13.2	20.5
c. I'm not sure	36.5	39.7	31.1

77. How honestly did you answer this survey?

	Grade 6	Grade 8	Grade 10	Grade 12
a. Very honestly	94.6	92.2	95.1	96.7
b. Somewhat honestly	5.4	7.8	4.9	3.3
c. Dishonestly				

Drug Use Scale

	Grade 6	Grade 8	Grade 10	Grade 12
No use	90.3	76.2	67.5	59.0
Low use	7.1	14.9	18.6	21.7
Moderate use	1.9	4.7	9.3	12.7
High use	.7	4.2	4.5	6.6

Alcohol Use Scale

	Grade 6	Grade 8	Grade 10	Grade 12
No use	67.0	39.8	24.3	17.0
Low use	31.4	44.5	38.4	30.2
Moderate use	1.2	8.9	21.3	29.2
High use	.4	6.8	16.0	23.6

Risk Scale

	Grade 6	Grade 8	Grade 10	Grade 12
Low risk	75.8	64.8	49.8	37.1
Moderate risk	22.9	30.5	43.7	53.8
High risk	1.3	4.7	6.5	9.1

Appendix B

Technical Approach

Technical Approach

Two years ago, in the fall of 1988, the Office of the Superintendent of Public Instruction (OSPI) and the Northwest Regional Educational Laboratory (NWREL) collaborated in a study to determine the extent and nature of substance use among public school students in the state of Washington (Deck & Nickel, 1989). In the fall of 1990, the survey of alcohol and other drug use was administered to sixth, eighth, and tenth grade students in a sample of schools across the state in November and early December. In this appendix, the development of the survey and its special scales, the implementation of the sampling plan, and other methodological issues are discussed.

Design of the Survey

The questions for the Student Alcohol and Drug Use Survey were drawn from a review of national and state student use surveys. Some of the questions were taken directly from the most comprehensive and continuing national survey, the University of Michigan's Monitoring the Future survey (Johnston, Bachman, and O'Malley, 1989). Areas of emphasis in the survey include basic student demographics, use of substances, risk factors predicting future use, perception of harmfulness of certain drugs, perceived parent attitudes, estimates of friends' use, and questions concerning alcohol and drug education. The questions were edited for clarity and readability by an editor of children's material, elementary and secondary teachers, and substance abuse advisory committees.

Over the last five years the Student Alcohol and Drug Use survey has been administered to more than 200,000 students in the Northwest states and Hawaii. The survey has evolved slightly based on the review of and local advisory committee members. For the current study, more items on drug education and an item on sharing needles were added. Two versions of the survey were prepared: a standard form with 67 questions for eighth and tenth grade students and an elementary form with 49 questions for sixth grade students.

Development of Special Scales

Since the survey asks students to indicate the frequency of their use of many substances, it is difficult to quickly determine the overall severity of abuse across all drugs. Are the same few students using many drugs or are different students using each drug? To facilitate interpretation, three summary scales were developed that combine the data from several items.

Drug Use Scale. The Drug Use scale is based on the type of drug used, the frequency of use, and the use of multiple drugs. Experimentation with marijuana is usually considered less harmful than experimentation with more powerful and addictive drugs like cocaine and heroin. Of course, frequent use of marijuana is also very harmful.

Tobacco, steroids, and over-the-counter drugs were not considered in computing the scale. Alcohol use was treated separately in an Alcohol Use scale.

The four levels of drug use were defined as follows:

1. **No use.** Student has never tried drugs in his or her lifetime.
2. **Low use.** Student has tried at least one drug but is not a frequent user and may not be currently using any drug. This may be considered experimental use.
3. **Moderate use.** Student is using one or more drugs more regularly (e.g., monthly or weekly use of marijuana) or is experimenting with very addictive drugs like cocaine or opiates.
4. **High use.** The student uses drugs frequently and risk of addiction is very high. Typically this implies daily use of marijuana or use of cocaine at least monthly. The level is defined by one or more of the following: a) daily use of marijuana, depressants, stimulants, tranquilizers, or inhalants; b) monthly or more frequent use of cocaine, opiates, or hallucinogens; or c) weekly use of two or more drugs.

Alcohol Use Scale. The Alcohol Use scale is based on both the quantity and frequency of alcohol consumption. This scale follows the concept used by others in rating drinking habits of adults (Jessor & Jessor, 1978), but modified for adolescents.

The four levels of alcohol use were defined as follows:

1. **No use.** Student has not tried beer, wine, wine coolers, or hard liquor in his or her lifetime.
2. **Low use.** Student has tried alcohol but is either an infrequent user or is no longer using alcohol.
3. **Moderate use.** Student drinks alcohol at least monthly or binge drinks (5 or more drinks consumed at one time) occasionally.
4. **High use.** Student drinks daily or binge drinks at least monthly. The risks of alcoholism, accidents due to drunk driving, or other problems are high.

These cutoff points may be considered by some as too conservative, i.e., labeling students heavy users when others might consider that drinking moderate. However, the research literature suggests that drinking has more damaging effects on adolescents. Regular use during this time of rapid physiological, social, and emotional development is considered by many to be particularly dangerous (Hawley, 1984).

At-Risk Scale. Prompted by the work of Hawkins, et al., (1986) at the University of Washington and others, the Risk scale attempts to predict potential students at risk of alcohol and other drug use by behavior rather than current drug usage. Items in the scale include such factors as friends' use of drugs, age of first use, absenteeism, arrests, family members with a problem, and attitudes toward use. These items represent only a sample of the many factors that might describe a student at risk. Some of the family and psychological factors that have been identified were not included.

For each risk item, a student was given one to five points depending upon their response. The answers to all risk questions are averaged for each student, providing a risk score between one and five. For ease of interpretation, cutoffs were established to divide the distribution of scores into *low*, *medium*, and *high* risk. Correlational studies were undertaken with the data from two other data sets (N=10,000) to confirm the inclusion of each item in the scale.

A student responding unfavorably to most of the items would be characterized as *high risk*. A student responding unfavorably to several items would be characterized as *moderate risk*. The *low risk* student responded unfavorably to only one or two factors.

Just as we can identify adults with highest risk of heart disease by looking at their behavior, heredity, and other factors, we can identify students who are most likely to use drugs or alcohol. However, there is no guarantee that a high risk student will actually use alcohol or other drugs in the future or that a low risk student will refrain.

Interpretation. These scales are intended to be used primarily for comparisons since the exact placement of the cutoffs for levels of use could be open for discussion. Thus, knowing that a given percentage of students are considered high users is more instructive if there is a comparison group, such as another grade level or the same grade level at a previous time.

Sampling Plan

A sampling plan was prepared that would keep administrative costs to a minimum but obtain accurate estimates of use statewide and by region. A target figure of 20,000 students across three grades was set. This represents approximately nine percent of all Washington public school students at grades six, eight, ten and twelve.

Sampling was done at the school level. Of the more than 1,700 schools in Washington, about 200 were selected for the survey sample.

All students within each sample school at a selected grade were surveyed to minimize administrative burden and class disruption. This ensured that an accurate picture of substance use could be obtained for each participating school and prevented any chance of sampling bias within the school. The advantages of census sampling within schools outweigh any disadvantages.

In order to assure a representative statewide sample, schools were stratified by region, size, and rurality. A school was the sampling unit. This is called a *cluster sample*, since the students are clustered together in the school.

Educational Service District (ESD) service areas were combined to form five regions as close to the same size as possible. These regions were Northeast (ESD 101), Southeast (central and southeast area covered by ESDs 105, 123, and 171), Southwest (the Olympic Peninsula and southwest areas covered by ESDs 112, 113, and 114), Metropolitan Seattle and Tacoma within ESD 121), and Northwest (ESD 189).

The estimated 1989 enrollments were averaged for each grade. Schools were then identified as 'large' if their enrollment was higher than average and 'small' if lower than average.

Lastly, each school was labeled *rural* if the district it was in served a population which was at least 75 percent rural as defined by the 1980 U. S. Census of Population and Housing. *Nonrural* districts have less than 75 percent rural population. This is obviously a rough estimate of rurality, but one that helps to distinguish the economic and social characteristics of schools. Since there were few large rural high schools, the small- and large- rural schools were collapsed together, leaving three categories for this sampling stratum--*large, non-rural; small, non-rural, and rural*.

Schools with at least ten students at the target grade were selected randomly within each cell of the sampling design. Alternative schools and certain other special schools were included.

The district superintendent for each school selected was sent a letter signed by the Superintendent of Public Instruction requesting their participation in the state survey and including information on the survey. They were asked to return a card indicating their willingness to participate and a contact person for the school. All schools which did not respond were given a follow-up call by OSPI staff. Whenever a school chose not to participate, NWREL staff randomly chose a replacement school from the same cell of the sampling design. Some of the reasons given for non-participation included recent participation in a local survey, concerns about press coverage of local results, and lack of time needed to secure the necessary approvals.

After six weeks, the follow-up for schools that had not responded was cut off in order to provide timely results. An unanticipated number of schools either refused to participate or never responded at all, particularly among the larger high schools.

Table B-1 shows the number of students (N) and schools (s) sampled by stratum aggregated across region. The number of schools ultimately contacted about participating and the students enrolled in those schools are shown in the first column. The Received column shows the number of schools which chose to participate and the number of edited answer sheets that were actually included in the final analysis. The difference between the Contacted and Received columns of Table B-1 is due in part to the non-participation of schools, of students within schools that did participate and to the screening of answer sheets.

**Table B-1.
Results of Sampling Plan.**

Strata	Grade	Contacted		Received	
		N	(s)	N	(s)
Rural	6	1,965	(21)	697	(21)
	8	1,065	(17)	972	(11)
	10	907	(15)	494	(10)
	12	793	(15)	384	(9)
Small, Non-Rural	6	2,867	(21)	1925	(31)
	8	719	(12)	553	(6)
	10	1,194	(13)	721	(12)
	12	1,054	(13)	737	(13)
Large, Non-Rural	6	2,621	(20)	3106	(21)
	8	4,326	(19)	3117	(15)
	10	5,230	(15)	3039	(13)
	12	4,559	(15)	2630	(13)

NOTE - N is the number of students, (s) is the number of schools.

The obtained sample of schools was very close to that which was planned. At the school level, nearly ninety percent of the targeted number of schools was obtained through the initial sampling and replacement procedures. At the student level, more than ninety percent (91.9%) of the desired number was achieved. Fewer rural schools responded to the survey than planned, and more schools were included in the Small, Non-Rural sixth grade group to allow more balanced regional comparisons. A sufficient number of schools participated in each cell and the undersampling of rural senior high schools was adjusted by weighting procedures described below.

Data Analysis

Any complex sampling design such as the stratified cluster sample used in this study requires that each student's responses be weighted in relation to the size of the school and the proportion of schools sampled from within the cell. This weighting scheme adjusts the impact of each student so the results are as close as possible to what would be gained from a statewide random sample. In Table B-2, key characteristics of the statewide public school population, the obtained survey sample, and the weighted survey sample are presented. Note that the impact of the statistical weighting procedure at each grade is to bring the weighted sample proportions closer to the actual statewide population proportion at each grade. Since the weighting is based in the two sampling strata, geographic region and size/rurality, the ultimate ethnic representation is the consequence of these other factors and will not experience as close a match to actual population statistics. The weighting process will occasionally yield a weighted sample for even one of the primary sampling strata which is farther from the actual proportion than the actual sample. These occurrences are rare, however. Importantly, all percentages in this report are based on the weighted sample.

Table B-2 describes the distribution of the sample by size, geographic region, and ethnicity. The distribution from the total population is provided for comparison to the unweighted and weighted distribution obtained in the sample. At the sixth grade, for example, 38 percent of the state's sixth graders live in the ESD 121, and 30 percent of the actual sample was from there. Weighting increased the percent in the northeast to 36 percent.

On the whole the weighted sixth grade data reflects the state regional population, over-emphasizes small non-rural schools, and under represents the large non-rural schools. The eighth grade sample was the most unlike the state population of the three grades. The distribution of weighted results is somewhat closer to that of the state total.

In general, minorities are oversampled in this study as they were in 1988. However, no particular ethnic group stands out as being oversampled. There is a slight over representation of blacks and American Indians in the sixth grade and of Hispanics in the eighth grade, but these variances are not considered extreme, especially given the uncertainty of the actual ethnic composition of the State.

Administration

Participating schools were sent a packet of administration instructions to ensure standardization of these procedures. A survey instrument and answer sheet were distributed to each student. The teacher read the survey instructions aloud as the students followed along. Students were told that their responses were completely anonymous--they were not to write their names on the survey answer sheet. To enforce confidentiality, students were instructed to bring their completed answer sheet to the front of the class and place it in an envelope supervised by an appointed student. That appointed student sealed the envelope and took the materials to the office.

**Table B-2.
Description of Actual and Weighted Sample.**

Group	Percent of Public School Population	Percent of Actual Sample	Percent of Weighted Sample
Grade 6			
Region			
Northeast	10	11	11
Southeast	15	19	12
Southwest	23	22	23
ESD 121	38	30	36
Northwest	14	19	18
Size			
Rural	19	12	21
Small-Not Rural	27	34	37
Large-Not Rural	54	54	42
Ethnic Background			
Asians	5	4	4
Blacks	4	9	9
Hispanics	5	6	5
Native Americans	2	6	6
Whites	84	76	76
Grade 8			
Region			
Northeast	10	9	8
Southeast	15	17	15
Southwest	22	23	26
ESD 121	39	45	33
Northwest	14	7	18
Size			
Rural	18	21	17
Small-Not Rural	4	12	21
Large-Not Rural	78	67	61
Ethnic Background			
Asians	5	5	4
Blacks	4	8	8
Hispanics	4	8	7
Native Americans	3	3	4
Whites	84	77	77

Table B-2 (con't).
Description of actual and weighted sample.

Group	Percent of Public School Population	Percent of Actual Sample	Percent of Weighted Sample
Grade 10			
Region			
Northeast	10	6	10
Southeast	14	17	15
Southwest	22	26	22
ESD 121	39	42	36
Northwest	14	10	16
Size			
Rural	18	12	12
Small-Not Rural	6	17	17
Large-Not Rural	77	71	71
Ethnic Background			
Asians	6	6	6
Blacks	4	6	6
Hispanics	4	6	6
Native Americans	2	2	2
Whites	84	80	80
Grade 12			
Region			
Northeast	10	5	10
Southeast	14	17	15
Southwest	22	26	23
ESD 121	39	41	36
Northwest	14	11	16
Size			
Rural	18	10	12
Small-Not Rural	6	20	17
Large-Not Rural	77	70	71
Ethnic Background			
Asians	6	6	7
Blacks	4	4	4
Hispanics	4	4	4
Native Americans	2	2	2
Whites	84	84	84

Table B-3. Number and Percent of Surveys Processed

1989 public school enrollment (grades 6, 8, 10, 12)	227,872
Number of Surveys Sent (Percent of all students)	27,300 (12.8)
Absences reported by teachers, estimated percentage	(9.7)
Students declining to take survey, estimated percentage	(2.2)
Total number of answer sheets returned to NWREL (Percent of Total Sent)	19,449 (71.2)
Sheets unusable if incomplete, if student was in wrong grade or the grade was left blank (Percent of sheets received)	62 (0.3)
Sheets discarded due to dishonesty, out of range answers, or impossible patterns (Percent of sheets received)	1,012 (5.2)
Total included in analysis	18,375

Students were told that the survey was completely voluntary. They did not have to participate, and they could leave unanswered any questions they thought too personal.

Quality Control Screening

Quality control procedures were developed with prior surveys to screen for incomplete, falsified, or otherwise unusable answer sheets. The effects of these factors on the obtained sample are described in Table B-3.

Since students were allowed to decline and some students were absent on the day the survey was administered, less than 100 percent of the target students were surveyed. Data reported by teachers appear to under-represent enrollment, absences, and refusals, since teachers did not uniformly complete the class information on the envelopes in which the surveys were returned. Answer sheets were unusable if the student was in a grade not included in the survey or if the student took an answer sheet but did not answer any items. This accounted for less than 1 percent of the sheets returned.

An extensive screening procedure was applied using a computer program. Additional sheets were discarded if the student admitted dishonesty on the last item, consistently marked items out of range (e.g., marked E on items with only two or three choices), or claimed an impossibly high level of use. About 5 percent were rejected for these reasons.

Substance use is probably higher among those students who were not included in the survey due to absenteeism, dishonesty, or inappropriate responses. Thus, the survey results reported here may be an underestimate of substance use in Washington in 1990. The same was true in 1988, however, so the 1988 to 1990 comparisons featured throughout this report would not be seriously affected if the absentee/refusal rates were the same in both years. However, these rates were slightly higher in 1990, so even the trends over time reported here must be interpreted somewhat cautiously. For an excellent discussion of this issue, see Johnston, Bachman & O'Malley (1989).

Validity

Questions are often raised as to whether students are honest in responding to a survey about such a sensitive issue as illicit drug use. Shocked by the high prevalence of substance abuse, some have argued that students are exaggerating their reports of drug use. All the evidence from this survey and similar national surveys clearly shows that all but a few students take the survey seriously and respond honestly. Some smoking research suggests, and certain drug treatment professionals feel, however, that some students may under-report their use. Thus, the survey may slightly underestimate the actual level of use.

The response patterns of students who fake high use, i.e., claim higher than actual use, or respond randomly were identified through a computer edit program. Only a small number of students falsely identified with use of a fake drug, marked high use of too many drugs, or reported lying on the survey. Surveys which match one of these patterns were eliminated from the analysis. About 2 percent were eliminated from analysis based on checks for dishonesty and another 2 percent were eliminated due to incomplete answer sheets. This is equivalent to the rejection rate observed in other studies.

It is more difficult to detect whether students are faking low use, i.e., understating their use. Keep in mind, however, that about 60 percent of seniors report some illicit drug use and over 80 to 90 percent report alcohol use. These high levels do not suggest under-reporting and are quite consistent with the results from national studies. More students could be expected to skip over sensitive items if they were concerned about reporting illicit drug use.

The internal consistency of answers to related questions provides further evidence of the validity of the survey responses. For example, responses across several items concerning drinking were compared and a little more than one percent of the students were found to be inconsistent in their responses. Thus a response of *Never drink* on the beer or wine and hard liquor items would be followed with *Never drink* on the quantity item. To take another example, the correlations among items were examined to determine the construct validity of the special scales. As expected, students scoring high on the drug and alcohol scales also score high on the risk scale, but some high risk students are not yet using drugs.

National studies of substance abuse also cite extensive evidence about the validity of these survey responses (Johnston, et al., 1989). Students have been highly reliable in their responses over a three-to-four year period. Responses between logically related items are very consistent. The observed trends and patterns of use have been consistent over time after nine years of research. The investigators concluded that properly administered self-reported surveys produce valid data.





JUDITH A. BILLINGS
STATE SUPERINTENDENT OF PUBLIC INSTRUCTION
OLD CAPITOL BUILDING, PO BOX 47200
OLYMPIA WA 98504-7200

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