

ANALYTIC REPORT

Washington State Survey of Adolescent Health Behaviors (1998)

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This report is one in a series from RMC Research Corporation that summarizes a major survey effort in the state of Washington. All of these reports, and the planning and implementation of the 1998 Washington State Survey of Adolescent Health Behaviors itself, have been the product of an immense collaborative effort between the authors, the Washington State Survey Policy Committee, and local educators and health professionals, and community members throughout the state of Washington.

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The planning of the survey effort through the Washington State Survey Policy Committee ultimately included many professionals from various agencies and disciplines across the state. However, the following state staff were most consistently involved:

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Executive Summary

The 1998 Washington State Survey of Adolescent Health Behaviors is the fifth statewide survey assessing health-related attitudes and behaviors of Washington's students in public schools. A total of 14,601 students in 102 elementary, middle, and high schools (including four piggyback high schools that were necessary to add to the sample) across the state participated in the sample which was designed to represent all sixth, eighth, tenth, and twelfth graders across the state. Of those schools that were asked to participate in the survey, 51 percent with sixth grade students, 61 percent with eighth grade students, and 63 percent with tenth and twelfth grade students took part in the survey. The characteristics of the sample are sufficiently representative of Washington's students, which makes it reasonable to generalize the results of the survey to the statewide population at the four grade levels. Notably, another 37,731 students in 258 schools participated voluntarily and at the expense of individual schools in order to obtain school-specific results to use in planning prevention programs. The results from these schools are not included in this report, however, as they were not selected for the scientific sample of students in public schools across the state. This is more than twice as many schools as have previously participated in the WSSAHB, a possible indication of increasing interest in health-related information across the state and a tribute to the collaboration among the sponsoring agencies and local community members.

This survey—a cooperative effort of Washington's Office of Superintendent of Public Instruction (OSPI), the Department of Social and Health Services (DSHS), and the Department of Community, Trade and Economic Development (CTED)—assessed students' attitudes and behaviors in three major adolescent health areas:

- ◆ Intentional Injury: Fighting and Weapon Carrying.
- ◆ Alcohol, Tobacco, and Other Drug (ATOD) Use.
- ◆ Risk and Protective Factors Related to these Adolescent Health Behaviors.

Throughout this report, major findings in these areas are compared to the results of previous Washington surveys, other national surveys, and the national health objectives in the National Public Health Service's *Healthy People 2000 (HP 2000)* report.

Intentional injury

- ◆ At all grades, 13–17 percent of the students had attacked someone at least once in the past year with the idea of seriously hurting them, which is essentially unchanged from 1995.
- ◆ The percentage of sixth grade students who reported carrying a weapon in the past 30 days steadily declined from 17 percent in 1992 to 9 percent in 1998. Among students in higher grades there was a substantial decline from 1992 to 1995, which leveled off in 1998 (14 percent of eighth grade, 11 percent of tenth grade, and 9 percent of twelfth grade students).
- ◆ The rate of weapon carrying on school property for self-protection or because the student thought it might be needed in a fight was similar in 1995 and 1998, except for a decrease in the percentage of sixth grade students who reported carrying a knife to school in the past month (from 4.4 to 1.8 percent). One percent of eighth, tenth, and twelfth grade students reported carrying a gun on school property for this reason in the past month.
- ◆ About one in four eighth and tenth grade students has engaged in some form of violent behavior in the past year.
- ◆ Eight percent of the sixth grade students, 12 percent of the eighth grade students, 12 percent of the tenth grade students, and 9 percent of the twelfth grade students indicated that they have belonged to a gang.
- ◆ By the time students reach sixth grade, one out of every 11 students reported experiencing depressive feelings (as measured by a depression scale). Among eighth and tenth grade students, one out of eight students reported experiencing these feelings, as did one out of 14 twelfth grade students.

***Lifetime
prevalence of
ATOD use***

- ◆ Lifetime prevalence rates of smoking tobacco and marijuana have steadily increased from 1990 to 1998 (except for smoking tobacco at eighth grade, which leveled off in 1998). Use of hallucinogens and cocaine has also shown an increasing trend among tenth and twelfth grade students. Following a decline from 1990 to 1995, lifetime prevalence of inhalant use increased in 1998 among sixth grade students. Thus, students in Washington are experimenting with these illegal substances at a greater rate than in the past.
- ◆ An exception to this trend is a decrease among eighth and tenth grade students in lifetime prevalence of smokeless tobacco.
- ◆ Alcohol remains the substance of choice among Washington's students. Smoking tobacco and marijuana follow. By the time students reach the end of high school, more than 80 percent of them have experimented with alcohol, two thirds have smoked cigarettes, and just over half have tried marijuana.
- ◆ The decline in the rate of sixth grade students experimenting with illicit drugs from 1988 (17 percent) to 1995 (6 percent) reversed in 1998 (13.5 percent). At all other grades there has been a steady increase from 1992 to 1998 in the percentage of students who have tried illicit drugs.
- ◆ Almost 14 percent of sixth graders have experimented with illicit drugs. This number more than doubles to 34 percent at the eighth grade level. By the time Washington's students reach their senior year in high school, more than half of them have tried an illicit drug (56.9 percent).
- ◆ Of those twelfth grade students who had ever tried a substance, the average age of first use was 13.2 for smoking a cigarette, 13.7 for drinking more than a sip of alcohol, 14.6 for smoking marijuana, and 15.3 for drinking alcohol at least once or twice a month.

Current use of alcohol

- ◆ The percentage of tenth and twelfth grade students who reported use of alcohol in the past 30 days increased from 1995 to 1998, while the percentage of sixth and eighth grade students remained unchanged.
- ◆ Nearly one-third of Washington's high school seniors binge drink, an increase from 1995 after remaining stable over the prior five years. Early declines in rates at Grades 8 and 10 reversed themselves in 1995 and continued to rise for tenth grade students in 1998. The rate for sixth grade students has steadily increased, nearly doubling from 1992 (4.0 percent) to 1998 (7.6 percent).
- ◆ Among sixth grade students, half of those students who drink get their alcohol at home and their parents know about it. In contrast, one-half to two-thirds of the eighth, tenth, and twelfth grade students who drink obtain their alcohol from friends. As students get older the percentage who ask adults to buy alcohol for them or who purchase it themselves increases.

Current use of tobacco

- ◆ From 1995 to 1998 there was a significant decrease in the percentage of eighth, tenth, and twelfth grade students who reported use of smokeless tobacco in the past 30 days.
- ◆ Nearly one of every eight twelfth grade student smokes at least five cigarettes per day, a rate that has been essentially unchanged since 1990. Among eighth grade students, this quantity of smoking increased from 1992 to 1995 and then decreased from 1995 to 1998.

Current use of marijuana

- ◆ Use of marijuana in the past 30 days has risen sharply since 1992 in all but Grade 6. Among eighth grade students, the rate almost tripled from 1992 to 1995, but leveled off in 1998 (16.5 percent). Among tenth grade students the rate nearly doubled from 1992 to 1995, and it increased only slightly (not significantly) in 1998. Among twelfth grade students there has been a steady increase in regular marijuana use from 1990 to 1998. In 1998, more than one in four tenth and twelfth graders (26.6 and 28.7 percent) reported current use of marijuana.

***Attitudes toward
ATOD use***

- ◆ Among eighth grade students, the decline from 1992 to 1995 in perceived health risk of smoking marijuana was accompanied by a significant increase of this behavior. An increase in perceived health risk from 1995 to 1998 was accompanied by a leveling off of this behavior. Among twelfth grade students the decline in perceived health risk continued to 1998, accompanied by a continued increase in use.
- ◆ Among eighth grade students, the decline from 1992 to 1995 in the perceived health risk of binge drinking was accompanied by a significant increase of this behavior. An increase in perceived health risk from 1995 to 1998 was accompanied by an unchanged rate of this behavior. Among tenth and twelfth grade students, the perceived risk was unchanged from 1995 to 1998, while the rate of binge drinking increased.

***Risk and protective
factors***

- ◆ Within the community domain, high school students are most at risk on the factors of “perceived availability of ATOD and firearms” and “laws and norms favorable toward drug use.”
- ◆ As students get older they are at increased risk on the community risk factors of “low neighborhood attachment,” “laws and norms favorable to use,” and “perceived availability of ATOD and firearms,” and at decreased resilience on the factor of “rewards for conventional involvement.”
- ◆ The strongest correlations between community risk factors and health risk behaviors involve “laws and norms favorable toward drug use” and “perceived availability of ATOD and firearms.”
- ◆ Within the school domain, students at all grades are most at risk on the factor “little commitment to school.” Within the school domain, this factor also had the strongest correlation with health risk behaviors.

- ◆ Within the peer-individual domain, high school students were most at risk on the factors “friends’ use of drugs” and “early initiation of problem behavior.” The strongest peer-individual correlates with ATOD use are “early initiation of problem behaviors,” “friends’ use of drugs” and “attitudes favorable toward drug use.” “Perceived risk of ATOD use” is also strongly correlated with alcohol and other drug use. The risk factors “early initiation of problem behavior,” “antisocial behavior,” and “interactions with antisocial peers,” are also strong correlates of violent and delinquent behavior.

- ◆ Protective factors show their strongest relationships with health risk behaviors in the peer-individual domain. An internal “belief in the moral order” and “positive social skills” are strongly associated with lower levels of alcohol use, drug use, delinquent behavior, and violent behavior.

- ◆ The results of the current survey clearly reaffirm the cumulative effect of multiple risks on alcohol and other drug use—the more risk factors present, the greater the likelihood of alcohol and other drug use. There is also a clear cumulative effect of multiple protective factors—the more protective factors present, the smaller the likelihood of alcohol and other drug use.

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Chapter 1: Introduction

The results presented here estimate the current status of health behaviors, relate them to characteristics of the students engaging in them, and examine trends in the behaviors over the past ten years.

People across the nation are taking a more active interest in their health and the healthy development of their children. There is no more convincing proof of this than the rising concern of the American public about the dangers of smoking and the excessive use of alcohol and other drugs. However, in contrast to the increasing concern for health among the nation's general public, adolescence is often filled with experimentation, risk-taking, and other influences not always in the interest of good health. As a result, young people all too often suffer the consequences of violence; alcohol, tobacco, and other drug use; and other related risk behaviors. Thus, a particular need exists for professionals, parents, and policymakers to actively promote responsible behavior and lifestyles among adolescents. Furthermore, such efforts need to recognize the interrelationships of the full range of health risk behaviors. Although focusing on any one behavior in isolation may lead to short-term success, such narrow efforts will almost inevitably fall short of promoting long-term improvement in healthy behaviors and lifestyles.

The Washington State Survey of Adolescent Health Behaviors (WSSAHB) is an effort to recognize the interdependencies of alcohol and other drug use, violence, and related risk and protective factors. By estimating the incidence and prevalence of these major adolescent health risk behaviors, this study provides crucial information to school officials, health professionals, human service agencies, policymakers, and parents as they work together to ensure the health of the young people across the state. The results presented here estimate the current status of these health risk behaviors, relate them to characteristics of the students engaging in them, and examine trends in the behaviors over the past ten years. They provide important needs assessment data for program planning and offer a global look at the effectiveness of statewide prevention and health promotion initiatives. These initiatives are based on several education and health-related goals. For example:

- National Education Goal number seven states that by the year 2000, every school in the United States will be free of drugs, violence, and

the unauthorized presence of firearms and alcohol and will offer a disciplined environment conducive to learning.

- Goal number one of the 1997 National Drug Control Strategy is “educate and enable America’s youth to reject illicit drugs as well as alcohol and tobacco.” Goal number two is “increase the safety of America’s citizens by substantially reducing drug related crime and violence.” Goal number three is to “reduce health and social costs to the public of illegal drug use.”
- The U.S. Department of Education, Safe and Drug-Free Schools Program, issuing Safe and Drug-Free Schools and Communities Act (SDFSCA) Principles of Effectiveness. Principle number one states that SDFSCA programs shall “base its programs on a thorough assessment of objective data about the drug and violence problems in the schools and communities served,” “to educate and enable America’s youth to reject illegal drugs as well as alcohol and tobacco.”
- The Washington Education Reform Act of 1993 established for all Washington students common learning goals intended to raise academic standards and student achievement. The Commission on Student Learning subsequently approved the essential academic learning requirements (EALRs or essential learnings) which define the specific academic skills and knowledge the state’s students will be required to meet. The EALRs in health and fitness “establish the concepts and skills necessary for safe and healthy living and, in turn, for successful learning.” One of the EALRs states that students will “identify physical, emotional, and legal consequences of using nicotine, alcohol, and other drugs and apply skills to resist any harmful use of substances.”
- The Washington State Board of Health (1998) recommended eight Priority Health Goals for 1999–2001. Two of these priority goals relate to ATOD use and one relates to violence: reduce tobacco use and exposure to secondhand smoke, reduce misuse of alcohol and other drugs, and reduce the incidence and impact of violence and preventable injuries.

- The Washington State Governor's Council on Substance Abuse has long-term goals to reduce substance abuse in the state. The Council's goals in the area of prevention include "prevent and reduce the misuse of alcohol, tobacco, and other drugs," "focus on outcome based prevention strategies to increase the effectiveness of prevention efforts," and "increase the community ownership and responsibility for the prevention and misuse of alcohol, tobacco, and other drugs."

In all, the results of this WSSAHB are intended to meet a wide variety of information needs, including:

- Progress of drug education programs funded under the federal Safe and Drug-Free Schools and Communities Act and the state Omnibus Alcohol and Controlled Substances Act.
- Progress in the state's attainment of the national public health objectives contained in Healthy People 2000.
- Progress of programs implemented pursuant to the state's Youth Violence Act, E2SHB 2319.
- Data for the state's comprehensive, cross-agency database on youth violence developed by the Department of Health and the Division of Alcohol and Substance Abuse of the Department of Social and Health Services.
- Data that can contribute information to local community profiles.
- Data for planning prevention and treatment services based on estimates of incidence and prevalence.
- Data on risk and protective factors that can be used by local school and community members as they plan or refine school- and community-based prevention and intervention programs.

The 1998 WSSAHB represents a cooperative effort among the Office of Superintendent of Public Instruction (OSPI), the Department of Social and Health Services' Division of Alcohol and Substance Abuse (DASA),

and the Department of Community, Trade and Economic Development (CTED) working with the contractor, RMC Research Corporation. These agencies comprised the Washington State Survey Policy Committee, which advised every step of the survey development and implementation process. In addition, staff from the University of Washington's Social Development Research Group provided valuable consultation on the risk and protective factors assessment portion of the survey.

This is the fifth biennial survey of Washington's students in Grades 6, 8, 10, and 12. The first two of these (Deck and Nickel, 1989; Gabriel, 1991) included questions only about alcohol, tobacco, and other drug (ATOD) use and associated risk and protective factors. In 1992 and 1995, coverage of a variety of other health risk behaviors was added (Einspruch and Pollard, 1993; Gabriel, Deck, Einspruch, and Nickel, 1995). The 1998 survey once again focused on ATOD and related risk and protective factors.

The results of the survey reported here included 14,601 students in 102 elementary, middle, and high schools across the state.

The results of the survey included 14,601 students in 102 elementary, middle, and high schools across the state. (This included volunteer high schools added to the sample due to a low return from schools in three cells of the sampling design. After weighting, these schools contributed 14 percent of the tenth grade students and 19 percent of the twelfth grade students included in the sample counts reported here.) A detailed account of the technical methodology used in this survey effort is available in a companion report written by RMC Research Corporation entitled *Technical Report: 1998 Washington State Survey of Adolescent Health Behaviors* (Deck, Einspruch, Nickel, and Gabriel, 1998). Readers interested in the more technical development of the statewide sampling plan, the assessment procedures, the reliability and validity of composite scales, and the analysis methodology are referred to the companion report. A brief summary will be presented here, however, to provide readers with some methodological guidelines for interpreting the results in this report.

A random sample of schools, stratified by geographic region and size, was selected at each grade level to constitute a representative sample of Washington's sixth, eighth, tenth, and twelfth grade students (schools were also ordered by community type to ensure inclusion along that

dimension). When a given school declined to participate (due to reasons such as conflicts with other student assessment or objection to the survey content or length), another school from the same geographic region, of the same size and community type, was added to take its place. Of these schools asked to participate in the survey, 51 percent with sixth grade students, 61 percent with eighth grade students, and 63 percent with tenth and twelfth grade students took part in the survey. In terms of reaching the target number of schools (using replacement schools), the rates are higher: 83 percent of the sixth grade, 89 percent of the eighth grade, and 73 percent of the high school targets were reached.

Representativeness is less certain for each of the four geographic regions, however. Across the grades there was variation in the extent to which a given region was over- or underrepresented. The data from participating schools were adjusted using a statistical weighting procedure to realign the proportionality of responses to reflect actual statewide enrollment. The resultant weighted responses provide accurate statewide estimates of Washington's students, but specific regional estimates cannot be provided.

... the results among high school seniors in surveys such as this are underestimates of young people of that age group because many of the students most likely to engage in these kinds of behaviors may have dropped out of school.

A final issue relating to the representativeness of the sample pertains to the likely influence of school dropouts on the sample results at the high school level. It is generally accepted that the results among high school seniors in surveys such as this are underestimates of young people of that age group because many of the students most likely to engage in these kinds of behaviors may have dropped out of school (Johnston, O'Malley and Bachman, 1994a). Thus, the authors recommend interpreting results among high school seniors with some caution—particularly when their prevalence rates differ markedly from those of students at earlier grades.

The school dropout issue is not new and has existed in previous Washington State surveys as well. Unless data to suggest that the current high school population includes a larger or behaviorally different collection of dropouts than in previous years, the bias in twelfth grade estimates is likely similar to what it has been in the past. This means that, while any given year's data on health risk behaviors of twelfth graders may be an underestimate, the year-to-year comparisons are likely to be less affected by this bias (Johnston et al., 1994a).

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RMC Research's analysis of the survey information included a series of quality control steps to remove data that were incomplete, obviously inaccurate, or internally inconsistent. After screening out these invalid responses, the resultant sample sizes at each of the four grade levels are as shown in Exhibit 1-1. The precision of the estimates presented in this report is a direct result of the size and design of the sample. Like public opinion surveys, the results presented in this report are not perfect estimates. They exist with a certain margin of error for interpretation. When readers examine the results presented here and make comparisons between 1995 and 1998 results, they must include this notion of margin of error. For example, is a 3 percent difference in alcohol use among sixth graders a statistically reliable one? Does it warrant interpretation and programmatic or policy attention, or is it within the realm of sampling error of the survey?

The sample sizes shown in the exhibit below indicate that, for statewide comparisons at each grade, the prevalence rates in this report can be interpreted within plus or minus 2 percent at Grade 6, 3 percent at Grade 8, and 4 percent at Grades 10 and 12. These margins of error allow 95 percent confidence in the interpretation of these results.

Exhibit 1-1. Number of Schools and Students in Statewide Sample by Grade

Grade Level	No. of Schools	No. of Students
6	43	3,945
8	33	4,061
10	26	3,984
12	22	2,611
Total	102¹	14,601

¹The 22 schools included in the twelfth grade sample were part of the 26 schools in the tenth grade sample.

Another 37,731 students from 258 elementary, middle, and high schools participated in the survey on a volunteer basis at the schools' expense.

Another 37,731 students from 258 elementary, middle, and high schools participated in the survey on a volunteer basis at the schools' expense. These schools received reports of their own results, but have not been included in this statewide report because they were not part of the representative sample. This is more than twice as many schools as have previously participated in the WSSAHB as possible indication of increasing interest in health related information across the state and a tribute to the collaboration among the sponsoring agencies and local community members.

Within the sample on which the results presented in this report are based, some key characteristics of the students include:

- Nearly equal percentages of males and females at each grade, closely matching the percentages in the population statewide.
- A slightly higher representation of minority students than is the case statewide at Grades 6 and 8, identical representation at Grade 10, and a slightly lower representation at Grade 12.
- A rural/urban mix of students that varies slightly by grade level. In general, urban students are slightly overrepresented at sixth grade and rural respondents are slightly overrepresented at twelfth grade.
- About two-thirds of the students come from homes with two adults living with them. This proportion declined with increasing grade levels, as only 41 percent of high school seniors reported living in a home with two adults.

Greater detail on the characteristics of the sample is provided in Chapter 5 of this report.

Beyond this introduction, the analytic report contains five additional chapters dealing with adolescent health behaviors of Washington's students.

Chapter 2 discusses violence, weapon carrying, and other delinquent behaviors. These questions are derived largely from the Centers for Disease Control and Prevention's *Youth Risk Behavior Survey*.

Chapter 3 presents the incidence and prevalence of alcohol, tobacco, and other drug (ATOD) use. These questions, used in all previous statewide surveys dating back to 1988, are taken primarily from the National Institute on Drug Abuse (NIDA) *Monitoring the Future* survey.

Chapter 4 presents the results of the assessment of risk and protective factors. These questions were taken from the risk and protective factors assessment instrument developed by the Social Development Research Group at the University of Washington.

Chapter 5 presents background and school- and community-related characteristics of the sample of students to better describe the nature of this sample as it mirrors statewide enrollment at the grade levels surveyed.

Chapter 6 concludes this report.

In reporting the results of this survey, the authors provide three comparative frames of reference. First, trends over time—comparisons with results of previous surveys—are presented. These comparisons allow readers to view the trends over past years' reports of health risk behaviors among Washington's students at the same grade levels. Second, comparisons with other national surveys of these health behaviors—primarily the *Monitoring the Future* survey—are presented. These provide an interpretive look at how Washington's students compare with their grade-level peers across the nation. Third, results of this year's assessment are compared with national education and health objectives. Healthy People 2000 and the Goals 2000: Educate America Act are two nationwide campaigns that guide many of the prevention, intervention, and health promotion efforts this survey addresses.

The results presented in this report are the major findings from this survey effort. However, there are many more possibilities for comparative analysis of the data resulting from this large, statewide effort. The appendix to this report features response frequencies to each

of the 122 items contained in the survey. Readers are referred to these specific items for more detailed information. In addition, other reports of these results will be forthcoming from the state agencies and RMC Research Corporation.

Caution

The following issues regarding the data should be remembered in reading this report:

- *Representativeness.* Every attempt was made to ensure representativeness of the sample to the students in Washington State public schools. Although the response rate to the survey was good (51 to 63 percent of recruited schools participated), it is possible that the results are not representative of the student population of the state as a whole. However, replacement schools for those refusing were selected to be similar in rurality and school enrollment to refusing schools. Participating and refusing schools might differ on a number of characteristics which might be related to responses to the survey. However, the use of randomly selected replacement schools is common and accepted survey practice. There was representation from across the state, including the Seattle and Tacoma School Districts. Thus, it may be reasonable to generalize the results to all students at these grade levels in Washington public schools.
- *Trends.* In making comparisons between the 1998 and earlier surveys, the reader should remember that a number of factors might influence apparent trends. For example, comparisons with the 1992 survey might be influenced by the inclusion of volunteer schools in the 1992 data, and information about the characteristics of the 1988 and 1990 samples is not readily available. However, comparisons between the sampled and volunteer schools in 1992 revealed similar levels of substance use. Also, the trends for substance use in this state from 1988 to 1998 appear to be similar to national trends.
- *School dropouts.* In interpreting differences between grades, the reader should remember that some reported behaviors and risk factors may appear more prevalent in the eighth and tenth grades

compared to twelfth grade because of increased school dropouts after age 16 (prior to twelfth grade).

- *Developmental changes.* In interpreting differences between grades, the reader should also be reminded that developmental changes may influence students' perceptions and accuracy of reporting.
- *Self-report data.* The survey measures self-reports, which may be influenced by a number of factors including problems in remembering, social desirability, and reading ability, as well as developmental changes (see above).
- *Correlational data.* Interrelationships among the variables should not be interpreted as indicating that one variable caused the other. Although this might be the case, it might also be that the reverse is true, or that an apparent relationship is due to some other measured or unmeasured cause (e.g., biased reporting). Multivariate analyses are necessary to control for other potentially important factors.
- *Extrapolations.* Estimates of the number of students who engage in a particular behavior should be regarded as estimates because of the issues described already, as well as other issues such as noninclusion of students who are not attending public schools (including students in private schools, home schooling, correctional facilities, school dropouts, and others).

Chapter 2: Intentional Injury Behaviors: Fighting and Weapon Carrying

On an average day in the United States, 65 people die from and more than 6,000 people are physically injured by interpersonal violence.

In 1984 the Surgeon General declared violence as much a public health issue for this nation today as smallpox, tuberculosis, and syphilis had been decades earlier. Fundamental to the public health perspective on violence is a shift away from a reactive and toward a proactive effort to change the social, behavioral, and environmental factors that cause violence (Mercy, Rosenberg, Powell, Broome and Roper, 1993). Central to this approach is the objective measurement of the incidence and prevalence of violence and violence-related behaviors.

From 1992 through 1995, there were an average of 36.8 million injury-related visits to emergency departments in the U.S. each year. Nearly four out of every ten visits to emergency departments were from injuries. Fifty-four percent of visits by children 5–14 years of age were injury related and 65 percent of visits by males 15–24 years of age were injury related. Falls were the leading external cause of injury, accounting for 24 percent of the injury-related emergency department visits. Being struck by, or striking against, an object or person caused another 13 percent, and motor vehicle traffic accidents caused the injuries in 12 percent of the visits for which an external cause was perceived (NCHS, 1998).

Injury is the leading cause of death for children 5 to 17 years of age (NCHS, 1998). Intentional injuries—those due to interpersonal violence including suicide—account for more than one-third of all injury-related deaths (CDC, 1993). On an average day in the United States, 65 people die from and more than 6,000 people are physically injured by interpersonal violence (NCHS, 1991). The youth of this nation are disproportionately represented in these statistics—both as perpetrators and as victims. Arrest rates for homicide and aggravated assault peak among older adolescents and young adults. Homicide remains the second leading cause of death for Americans aged 15 to 34, and the third leading cause of death for children 5 to 14 years of age.

Schools have felt the impact of increasing violence as well. For example, teachers report that they have been verbally abused or physically

threatened by students (NCES, 1991). From 1987–88 to 1993–94, increasing percentages of teachers in public schools reported physical conflicts among students as moderate or serious problems in their schools (from 26 to 40 percent). In addition, the percentages of public secondary school teachers reporting weapons possession as a moderate or serious problem in their schools nearly doubled from 1990–91 to 1993–94 (NCES, 1996).

Fighting

Ten to fifteen percent of students nationwide indicate that they feel unsafe at school or going to and from school at least some of the time. About half of these students have actually stayed home from school because of concerns for their physical safety (Johnston, O'Malley, and Bachman, 1994). More than one-fourth of students nationwide report that street gangs are present in their schools (28.4 percent in 1995, up from 15.3 percent in 1989) (NCES, 1998a). Victimization rates at school for high school seniors have changed little between 1976 and 1996, with the exception of small increases in the percentage of students who reported being threatened both with and without a weapon in the past 12 months (Johnston, et al, 1996). In 1996, 38.3 percent of seniors reported having something stolen, 25.9 percent had property deliberately damaged, 13.2 percent had been threatened with a weapon, 4.9 percent had been injured with a weapon, 21.6 percent had been threatened without a weapon, and 11.8 percent had been injured without a weapon. More than half of U.S. public schools reported experiencing at least one incident of crime during school year 1996–97, and one in ten schools reported at least one serious violent crime during that school year. Physical attacks or fights without a weapon led the list of reported crimes in public school, with about 190,000 such incidents reported for 1996–97 (NCES, 1998b). In these conditions, students are much less likely to actively participate in the learning process and make meaningful academic progress.

In national polls of teacher attitudes toward the public schools (Langdon, 1997), teachers reported changed perceptions of how often their students misbehave in the classroom. From 1984 to 1997, the percentage of teachers who reported that students misbehave most of the time or fairly often decreased for six discipline problems, including truancy and absence, vandalism of school property, skipping classes, theft of school

property, drinking alcohol at school, and sexual activity at school. The percentage also dropped from 1989 to 1997 for five other problems, including incomplete homework, sloppy dress, cheating, stealing personal property, and selling drugs at school. While this trend represents good news, the percentage of teachers who perceive that these problems occur remains an area of needed attention (for example, in 1997 the percentage of teachers who perceived that these problems occur most of the time or fairly often was 21 percent for stealing money or personal property, 20 percent for vandalizing school property, 15 percent for using drugs at school, and 5 percent for carrying weapons to school). In addition, 2 percent of teachers reported that physical attacks on teachers or staff occurred most of the time or fairly often, a percentage that has remained stable since 1984.

The latest Phi Delta Kappa/Gallup (1997) poll of public attitudes toward the public schools showed that school safety and student ATOD use remain a preeminent public concern. When asked an open-ended question regarding the biggest problems with which the public schools in their community must deal, 15 percent of the respondents mentioned lack of discipline, 14 percent mentioned use of drugs, and 12 percent mentioned fighting/violence/gangs.

Fighting, weapon carrying, and attempted suicide are all health risk behaviors associated with threats to personal safety, future injury, and death. Eleven of the national health objectives in Healthy People 2000 pertain to intentional injury and related risk behaviors.

In this chapter the authors report the findings on health risk behaviors related to violence and intentional injury. Other related behaviors, such as gang membership and depression, are also presented.

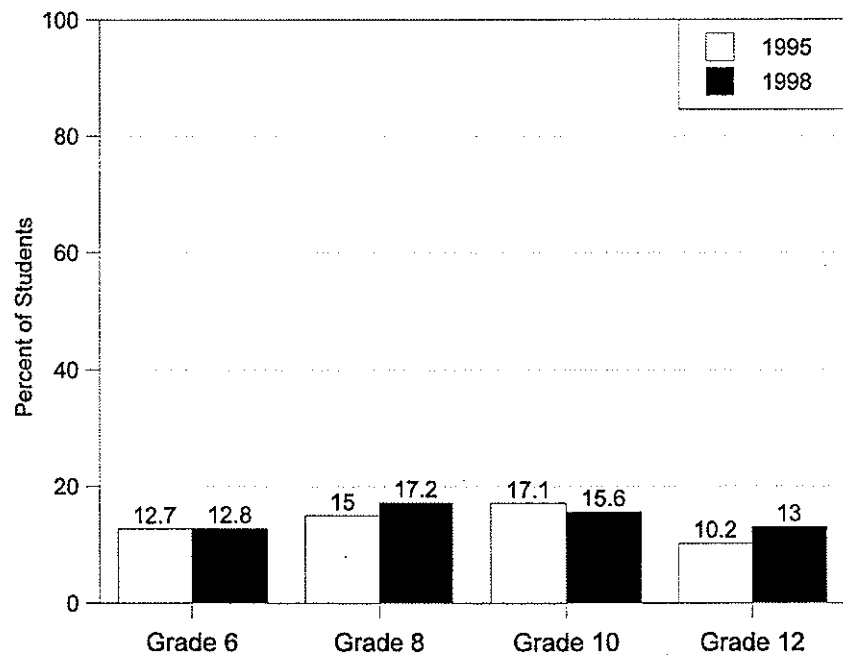
Young people physically fighting with one another is perhaps the most obvious behavioral indicator of interpersonal violence. The 1998 WSSAHB asked students fewer questions about fighting than the previous survey. Students were asked how often in the past year they had attacked someone with the idea of seriously hurting them. Exhibit 2-1 shows that 13 percent of the sixth grade students, 17 percent of the eighth grade students, 16 percent of the tenth grade students, and 13 percent of the twelfth grade students had exhibited this behavior in the

past year. These percentages are similar to those reported in 1995. Students were not asked in 1998, as they had been in 1992 and 1995, about their involvement in fights that resulted in injuries that had to be treated by a doctor or nurse.

◆ Finding ◆

At all grades, 13–17 percent of the students had at least once in the past year attacked someone with the idea of seriously hurting them.

Exhibit 2-1. Prevalence of Attacking Someone With the Idea of Seriously Hurting Them



The Healthy People 2000 objective calls for a reduction in the annual prevalence of physical fighting:



Reduce by 20 percent the incidence of physical fighting among adolescents aged 14 to 17.

Weapon carrying

... a daily average of seven juveniles were homicide victims in 1994.

Weapons at school or carried by young people greatly increase the risk of serious injury accompanying interpersonal violence. Firearms are the second-leading cause of death among young people aged 10 to 34 and one out of every five deaths of teens across the country is due to firearms. In 1990, more adolescents in the United States died from firearm-related injuries than from all natural causes combined (Mercy, 1993). The number of juveniles murdered increased 82 percent between 1984 and 1994, and a daily average of seven juveniles were homicide victims in 1994 (Snyder, Sickmund, and Poe-Yamagata, 1996).

Since 1992 students have been asked how many times in the past 30 days they have carried a weapon, such as a gun, knife, or club for self-protection or because they might need it in a fight. Exhibit 2-2 shows that from 1992 to 1995 there was a substantial drop in the percentage of students who had carried a weapon in the past 30 days. Among sixth grade students this trend continued from 1995 to 1998. However, this trend has leveled at Grades 8 through 12.

◆ Finding ◆

The percentage of sixth grade students who reported carrying a weapon in the past 30 days steadily declined from 17 percent in 1992 to 9 percent in 1998. Among students in higher grades there was a substantial decline from 1992 to 1995, which leveled off in 1998.

Exhibit 2-2. Weapon Carrying in the Past 30 Days

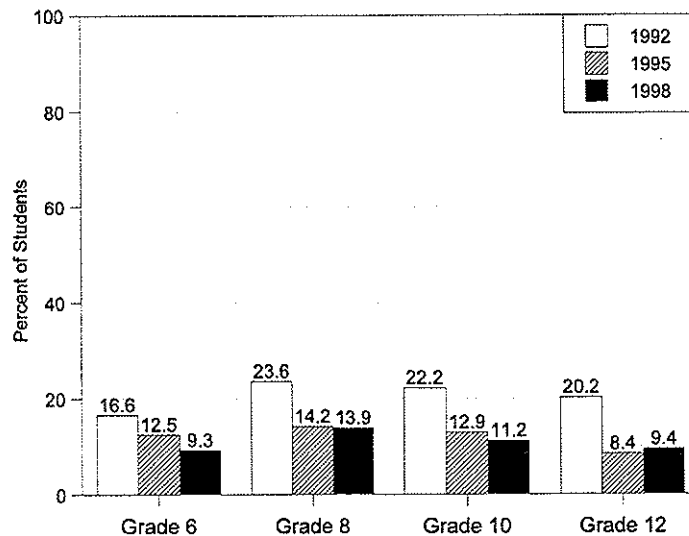
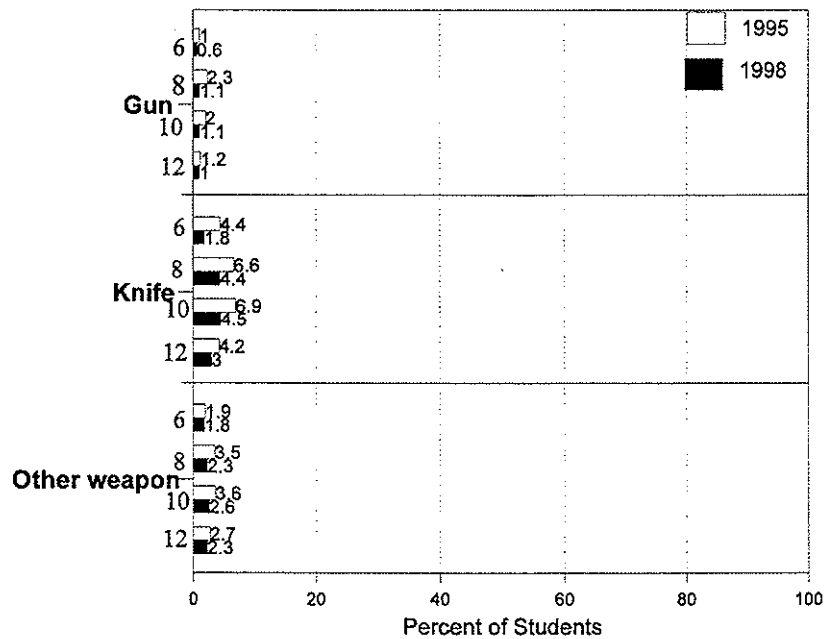


Exhibit 2-3 illustrates the percentage of students who had carried a gun, knife or razor, or club, stick, pipe, or other weapon on school property in the past month for self-protection or because they thought they might need it in a fight. The prevalence of weapon carrying on school property was similar in 1995 and 1998, with the exception of a decrease in the percentage of sixth grade students who reported carrying knives to school. Even though these are low-prevalence behaviors, they are nevertheless critical in that any weapon carrying on school property represents a threat to student safety, as evidenced by school violence that has occurred in Washington and around the country during the past year.

◆ Finding ◆

Weapon carrying on school property for self-protection or because the student thought he or she might need it in a fight was similar in 1995 and 1998, except for a decrease in the percentage of sixth grade students who reported carrying a knife to school within the past month. One percent of eighth, tenth, and twelfth grade students reported carrying a gun on school property for this reason in the past month.

Exhibit 2-3. Percentage of Students Who Carried a Weapon to School in the Past Month



As with fighting, the Healthy People 2000 report calls for a reduction in the prevalence of weapon carrying:



Reduce by 20 percent the incidence of weapon carrying by adolescents aged 14 to 17.

The incidence of weapon carrying in the past 30 days is calculated through students' responses to how many times they had carried a weapon in the past 30 days (this could have been on school property or somewhere else). An estimated 24 weapon-carrying incidents per 100 sixth grade students occurred in the previous month, approximately 37 such incidents occurred among eighth and tenth graders, and 32 occurred among high school seniors. This means that among students in a typical classroom of 25 students, there were six weapon-carrying incidents at the sixth grade level, nine at the eighth and tenth grade levels, and eight at the twelfth grade level.

About 75 percent of students in Grades 8 and 10 who reported carrying a weapon in the past month for protection or fighting say they carry knives. Thirty-eight to 60 percent of students at all grades report carrying a club, stick, or pipe as a weapon. At all four grades about one in five students who carried a weapon in the past month carried a gun. These data are critical to report as firearms are centrally linked to serious injury and death among teens.

Violent and delinquent behavior

The *WSSAHB* included a number of specific items regarding different indicators of violent behavior (e.g., fighting, weapon carrying). In addition to reporting information related to single indicators, it is useful to combine the information across indicators to form a composite index of violent behaviors—which school and health officials can use as a general indicator of the magnitude of violent behavior in their school.

In 1998 three items were selected to construct a violent behavior scale (carrying a handgun in the past year, attacking someone in the past year, and carrying a weapon in the past month for self-protection or because it might be needed in a fight). Another three items representing delinquent, but not necessarily violent, behaviors were combined to form a

delinquent behavior scale. These included being suspended from school, selling drugs, and being arrested in the past year. Details about the construction of these scales are contained in the technical report accompanying this survey (Deck et al., 1998). It is important to note, however, that these scales are not comparable to the ones that were constructed in 1995 due to changes in the items. Briefly, the authors have combined the information from items on the WSSAHB to define the following three levels of violent or delinquent behavior:

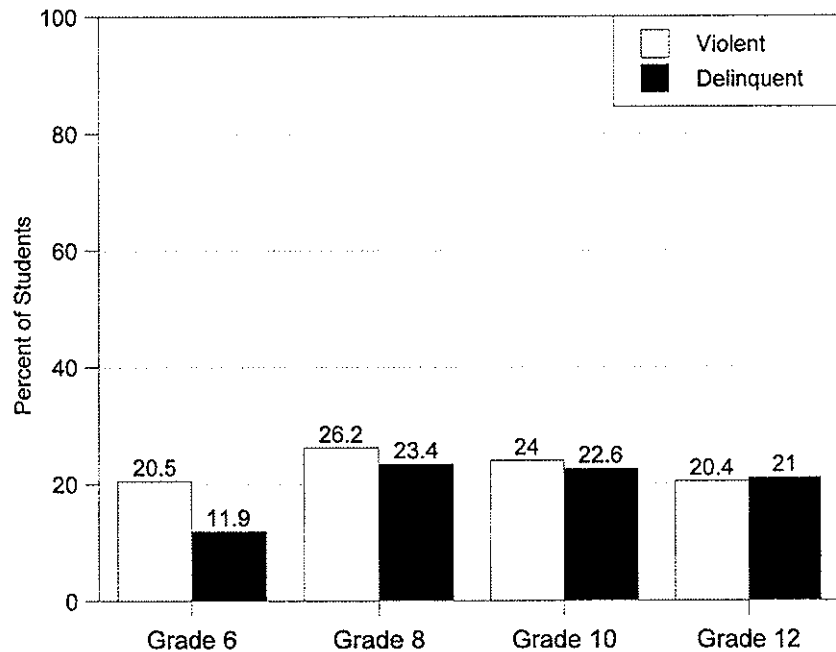
- ◆ *None*—Indicating no violent or delinquent behavior reported in the past 12 months.
- ◆ *Infrequent*—Indicating the occurrence of one or two violent or delinquent behaviors in the past 12 months.
- ◆ *Frequent*—Indicating three or more violent or delinquent behaviors or the occurrence of a single violent incident or delinquent behavior ten or more times in the past 12 months.

The percentage of students at each grade exhibiting some degree of violent and delinquent behavior is shown in Exhibit 2-4. The prevalence of at least some violent behavior is fairly consistent across the grades, although it peaks at the eighth grade and is at its lowest among sixth grade students. About one in four eighth and tenth grade students had engaged in at least one violent behavior in the past year, as had about one in five sixth and twelfth grade students. Delinquent behavior, on the other hand, nearly doubles from sixth to eighth grade (from 12 to 23 percent) and remains fairly stable from that point through high school. At the sixth grade level, delinquent behavior is far less prevalent than violent behavior. Among eighth, tenth, and twelfth grade students delinquent and violent behavior are at similar levels.

◆ Finding ◆

About one in four eighth and tenth grade students has engaged in some form of violent behavior in the past year.

Exhibit 2-4. Prevalence of Violent and Delinquent Behavior in the Past Year



Studies generally show that violent behavior among students is more characteristic of males than females. This is clearly the case in Washington. Males are about 1.3 times more likely than females to engage in any violent behavior and three to six times as likely to engage in such behavior frequently. For example, 8 percent of eighth grade males have engaged in violent behavior frequently, while only 3 percent of females have done so.

Gang membership

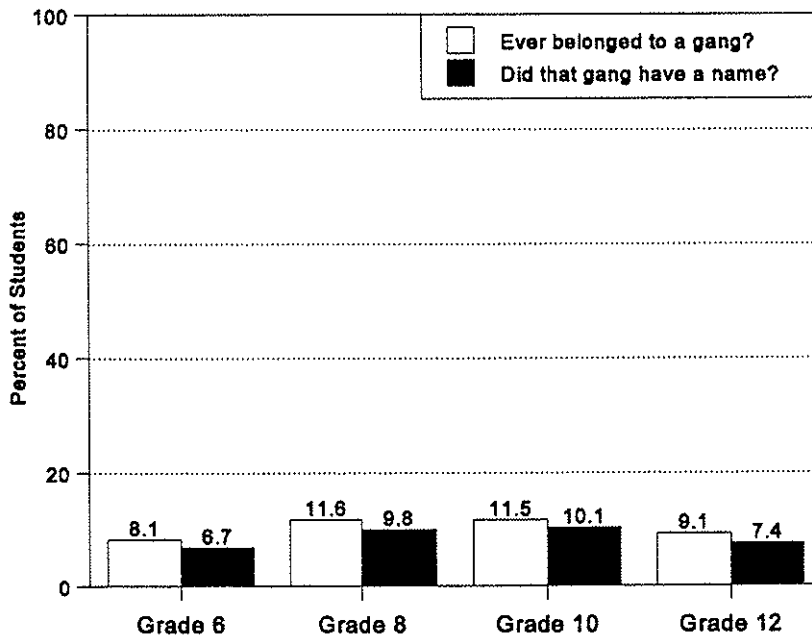
Eight percent of the sixth grade students, 12 percent of the eighth grade students, 12 percent of the tenth grade students, and 9 percent of the twelfth grade students indicated that they have belonged to a gang.

Students were asked if they had ever belonged to a gang (sometimes referred to as an organization, click, clique, set, or posse). Eight percent of the sixth grade students, 12 percent of the eighth grade students, 12 percent of the tenth grade students, and 9 percent of the twelfth grade students answered “yes” to this question. Students were asked, if they had ever belonged to a gang, if that gang had a name. Seven percent of the sixth grade students, 10 percent of the eighth grade students, 10 percent of the tenth grade students, and 7 percent of the twelfth grade students answered “yes” to this question. Exhibit 2-5 illustrates the results of these two questions. These results are not comparable to results from the 1995 WSSAHB, which asked a question about current gang membership.

◆ Finding ◆

At Grades 8 and 10, one out of eight students reported having ever belonged to a gang, and one out of ten students reported that this gang had a name.

Exhibit 2-5. Percentage of Students Having Ever Belonged to a Gang and That Gang Had a Name



Depression

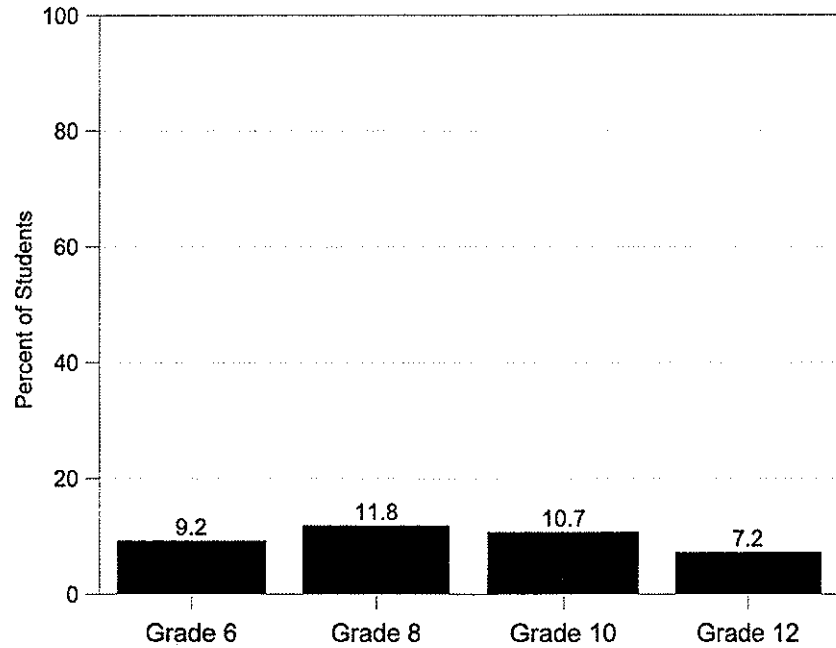
People who are depressed experience a range of symptoms, including sadness, loss of their usual interests and pleasures, sleep disturbance, weight or appetite disturbance, difficulty concentrating, intense feelings of guilt, and suicidal thoughts or behaviors (Keefe and Harvey, 1994). Those who experience depression may experience social or occupational impairment; even if this impairment is not present, normal functioning requires markedly increased effort. People who experience a depressed mood or loss of interest for at least two weeks, accompanied by at least four additional symptoms of depression, are said to have a "major depressive episode" (American Psychiatric Association, 1994). This serious condition is associated with high mortality (up to 15 percent of individuals with severe major depressive disorder die by suicide).

The WSSAHB contained four items related to depression for the first time in 1998: feeling like life is not worth it, thinking of one's self as no good, thinking of one's self as a failure, and feeling depressed on most days during the past year. While these items are not sufficient to diagnose depression, they do provide a sense of the extent to which students experience some depressive feelings. These items were combined to form a single indicator of depression by averaging the responses to the four items on a scale from 0 to 3; students who had a score greater than 2 on this scale were considered to experience depressive feelings as measured by this scale. Exhibit 2-6 illustrates that by the time students reach sixth grade, one out of every 11 students reported experiencing depressive feelings. Among eighth and tenth grade students, one out of nine students reported experiencing these feelings, as did one out of 14 twelfth grade students.

◆ Finding ◆

About one in 11 sixth grade students, one in eight eighth and tenth grade students, and one in 14 twelfth grade students reported experiencing depressive feelings.

Exhibit 2-6. Percentage of Students by Grade Level Reporting Experience of Depressive Feelings



Depression is an important condition to address due to its association with suicide, which is the third leading cause of death among 15- to 24-year-olds. In the past four decades, the rate of suicide among adolescents has quadrupled (CDC, 1993). Attempted suicide heightens the risk of eventual suicide and is related to a host of other problem behaviors, such as substance abuse and delinquency.

Although the current WSSAHB did not include questions regarding suicidal ideation and behavior, the 1992 and 1995 administrations did include such questions. In 1995, about one in five students had thought about suicide and about one in ten had made a plan to attempt suicide. A similar proportion, about one in ten had actually attempted suicide. Among all attempted suicides, about 30 percent resulted in injury.

The national health objective in Healthy People 2000 is:



Reduce by 15 percent the incidence of injurious suicide attempts among adolescents aged 14 to 19.

Using the 1992 Washington survey as baseline, the rates of injurious suicide attempts declined significantly from 1992 to 1995 at all grades and exceeded the Healthy People 2000 objective by a wide margin.

Chapter 3: Alcohol, Tobacco, and Other Drug (ATOD) Use

Each year, nearly half a million Americans die from their use of alcohol, tobacco, or other drugs, making substance abuse the single largest preventable cause of death in this country.

Concerns about alcohol, tobacco, and other drug (ATOD) use among young people have both short- and long-term implications. In the short term, ATOD use interferes with positive, healthy development—physically, emotionally, and socially. Relationships within families and among friends and satisfactory progress in school are all casualties of substance use. Almost one-third (30 percent) of Americans report that drinking has been a source of trouble in their family (Gallup, 1997). This figure was 7 percentage points higher than in 1996 and the highest since Gallup began asking the question in 1950. In the long term, ATOD use is associated with delinquency and criminal activity, unintended injuries, and a variety of severe health complications, including shorter life expectancy (CDC, 1993). For example, 30 percent of suicides, 50 percent of homicides, and 30 percent of accidental deaths are associated with alcohol abuse; two-thirds of all violent crimes are committed by perpetrators using alcohol (NIAAA, cited by Glassman, 1997). Each year, nearly half a million Americans die from their use of alcohol, tobacco, or other drugs, making substance abuse the single largest preventable cause of death in this country (Robert Wood Johnson, 1993).

Schools experience the consequences of ATOD use in a variety of ways, some quite dramatic. CASA (1997) reported that a national survey of teachers, principals, teens, and parents revealed that 29 percent of high school students reported that a student in their school died from an alcohol- or drug-related incident in the past year. The survey also illustrated dramatic differences between students' perceptions of drugs in schools compared to those of teachers and principals (students thought that drugs were commonplace in their schools, while teachers and principals were often unaware of the situation).

ATOD use among youth remains a concern in the mind of the public. The Robert Wood Johnson Foundation (1997) reported that among adults surveyed, "drugs" was listed by 56 percent as the top problem

facing American children (24 percent mentioned crime and 22 percent mentioned home life breakdown and related problems).

The economic costs of ATOD abuse are enormous. Joseph Califano, former Secretary of the U.S. Department of Health and Human Services, estimated that in 1993 the overall cost to society of alcohol, tobacco, and other drugs was nearly \$400 billion (CASA, 1993). Wickizer, Wagner, Atherly, and Beck (1993) studied the economic costs of alcohol and other drugs to Washington State in 1990. The authors estimated that the economic losses in Washington State due to alcohol and other drugs was \$1.81 billion, or \$372 for every man, woman, and child living in the state. The authors also found that alcohol abuse, not other drug abuse, had the greatest economic impact and that for every one dollar the state collects in tax revenue from alcohol sales, over seven dollars are spent as a result of alcohol abuse.

Alcohol, tobacco, and other drug use are preventable behaviors. The national health objectives for the year 2000 have included reductions in ATOD as a high priority. Thirteen of the Healthy People 2000 objectives relate to the use of alcohol or other drugs by adolescents. Another seven pertain to tobacco use.

Nationally, after six years of steady increase, in 1997 marijuana use leveled off among eighth grade students, and the rate of increase decelerated among tenth and twelfth grade students (Johnston, O'Malley, and Bachman, 1997). Similarly, after several years of steady increase, the reported use of LSD and other hallucinogens leveled in 1997 in all three grades. Alcohol use remained high but has not shown much change over the past few years. In addition, important attitudes and beliefs about drugs began to reverse. The authors noted:

The bottom line is that the longer term rises in the use of most drugs, which began in the early 1990s among American teenagers, appear to have stalled or at least decelerated; in addition, for most drugs, important underlying attitudes and beliefs have stopped eroding. That still leaves us with unacceptably high levels of teen drug use, however, with some usage rates two to three times what they were in the early 1990s . . . If we expect [youth] to reject illicit drug use, we must educate and persuade them with the help of many sectors: the family, school, community,

entertainment, media, and national leadership. The more consistent the messages from all of these sectors, the more effective our society will be at preventing the many tragic consequences of drug use among our children.

**Experimentation
with alcohol,
tobacco, or other
drugs**

... young people who use marijuana are 85 times more likely to use cocaine than those who have never used marijuana.

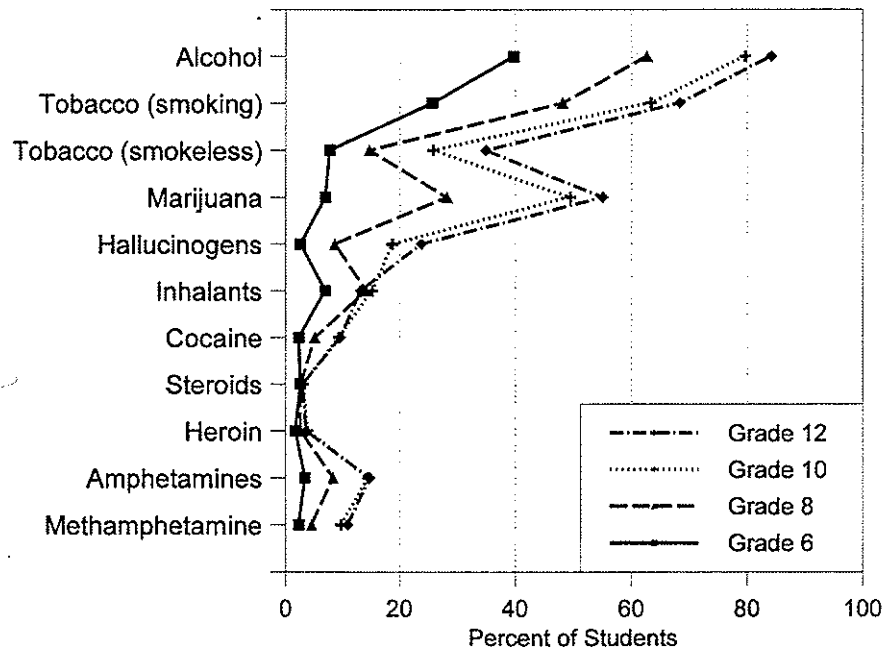
The WSSAHB includes questions about 11 different substances. The percentage of students at each grade who reported having ever tried each substance is shown in Exhibit 3-1. As has been the case in each of the previous state surveys, alcohol is the substance of choice at all grades, followed by smoking tobacco and marijuana. These three are often termed “gateway” substances, representing initial experimentation with illegal drugs that often leads to more frequent use of these and other substances. Although the majority of people who use marijuana do not go on to use more addictive substances, studies on the influence of gateway drugs indicate that young people who use marijuana are 85 times more likely to use cocaine than those who have never used marijuana (CASA, 1994).

◆ Finding ◆

As in all previous state surveys, alcohol was reported as the substance of choice among Washington's students. Smoking tobacco and marijuana follow. By the time students reached the end of high school, more than 80 percent of them had experimented with alcohol, two thirds had smoked cigarettes, and just over half had tried marijuana.

This should be a bar chart, not a graph.

Exhibit 3-1. Lifetime Prevalence of Alcohol, Tobacco, and Other Drugs Grades 6, 8, 10, and 12



To contrast the current year's experimentation rates with those of previous surveys, the data from the 1988, 1990, 1992, and 1995 surveys are presented in Exhibit 3-2, along with the 1998 findings. The change from the most recent prevalence estimates in 1995 is computed in the final column of the tables and is highlighted in **bold** when the change represents a difference of statistical significance ($p < .05$).

The evidence is compelling that Washington's students are experimenting with illegal substances at far greater rates than in the past several years—particularly with tobacco and marijuana.

Lifetime prevalence rates of smoking tobacco and marijuana have steadily increased from 1990 to 1998 (except for smoking tobacco at eighth grade, which leveled off in 1998). Use of hallucinogens and cocaine has also shown an increasing trend. Following a decline from 1990 to 1995, inhalant use increased in 1998 among sixth, tenth, and twelfth grade students. The evidence is compelling that Washington's students are experimenting with illegal substances at far greater rates than in the past several years—particularly with tobacco and marijuana. An exception to this trend include smokeless tobacco, which showed a decrease in experimentation among eighth, tenth, and twelfth grade students.

Exhibit 3-2. Lifetime Prevalence of Alcohol, Tobacco, and Other Drug Use: 1988–1998

Grade 6

Substance	1988	1990	1992	1995	1998	Change '95-'98
Alcohol	51.4	33.0	33.0	33.2	39.8	6.6
Tobacco, smoking	12.4	11.3	11.7	20.6	25.7	5.1
Tobacco, smokeless	9.5	5.4	5.5	7.1	7.8	0.7 <i>not significant</i>
Marijuana	3.6	1.7	1.9	4.9	7.0	2.1
Hallucinogens	1.5	.8	1.2	1.1	2.6	1.5
Inhalants	13.0	7.5	7.7	3.9	7.0	3.1
Over-the-counter drugs		7.0	7.8	2.0		
Cocaine	.8	.9	1.1	1.3	2.3	1.0
Steroids	1.7	1.2	1.1	1.2	2.6	1.4
"Other illegal drugs"			1.4	1.6		
Heroin					1.7	
Amphetamines					3.4	
Methamphetamine					2.3	

Note: Blank entries indicate a substance was not represented on that particular year's survey.

Grade 8

Substance	1988	1990	1992	1995	1998	Change '95-'98
Alcohol	68.9	60.2	55.3	58.1	62.7	4.3
Tobacco, smoking	29.8	32.5	31.0	48.9	48.2	-0.7
Tobacco, smokeless	16.6	13.9	13.1	22.9	14.8	-8.1
Marijuana	14.4	11.2	9.0	27.2	28.2	1.0
Hallucinogens	4	5.0	5.6	9.3	8.7	-0.6
Inhalants	17.3	17.1	17.4	14.5	14.3	-0.2
Over-the-counter drugs		13.8	11.1	11.6		
Cocaine	2.0	3.0	2.0	5.5	5.2	-0.3
Steroids	3.0	2.0	1.0	2.5	2.6	-0.1
"Other illegal drugs"			4.0	8.4		
Heroin					2.6	
Amphetamines					8.4	
Methamphetamine					4.6	

Note: Blank entries indicate a substance was not represented on that particular year's survey.

Grade 10

Substance	1988	1990	1992	1995	1998	Change '95-'98
Alcohol	84.1	75.7	70.3	70.5	79.7	9.2
Tobacco, smoking	43.1	43.4	43.7	55.7	63.4	7.7
Tobacco, smokeless	21.5	22.1	23.2	30.7	25.8	-4.9
Marijuana	32.7	21.5	22.8	39.1	49.5	10.4
Hallucinogens	12.1	9.1	11.1	15.4	18.8	3.4
Inhalants	19.5	17.7	15.6	12.3	15.3	3.0
Over-the-counter drugs		23.2	18.4	12.3		
Cocaine	8.1	4.3	3.5	7.4	9.4	2.0
Steroids	4.9	3.0	2.2	2.1	3.1	1.0
"Other illegal drugs"			7.9	11.6		
Heroin					3.9	
Amphetamines					14.6	
Methamphetamine					9.8	

Note: Blank entries indicate a substance was not represented on that particular year's survey.

Grade 12

Substance	1988	1990	1992	1995	1998	Change '95-'98
Alcohol		83.0	79.8	82.1	84.2	2.1
Tobacco, smoking		51.7	52.6	64.7	68.4	3.7
Tobacco, smokeless		28.5	27.9	37.7	35.0	-2.7
Marijuana		34.0	32.9	43.5	55.1	11.6
Hallucinogens		13.7	16.8	18.7	23.8	5.1
Inhalants		16.4	13.1	11.0	13.3	2.3
Over-the-counter drugs		27.2	22.3	11.6		
Cocaine		7.8	4.6	7.6	9.7	2.1
Steroids		3.2	2.4	2.4	3.0	0.6
"Other illegal drugs"			9.5	11.1		
Heroin					3.6	
Amphetamines					14.9	
Methamphetamine					11.0	

Note: Blank entries indicate a substance was not represented on that particular year's survey. In 1988, high school seniors were not surveyed.

Of those twelfth grade students who had ever tried a substance, the average age of first use was 13.2 for smoking a cigarette, 13.7 for drinking more than a sip of alcohol, 14.6 for smoking marijuana, and 15.3 for drinking alcohol at least once or twice a month.

Students begin experimenting with alcohol and other drugs at a rather early age. The younger the age of drinking onset, the greater the chance that an individual will develop a clinically defined alcohol disorder at some point in life. For example, Grant, et al. (1997) found that young people who began drinking before age 15 were four times more likely to develop alcohol dependence than those who began drinking at age 21. Exhibit 3-3 shows the average age of experimentation, based on those who had ever tried a given substance. On average, sixth grade students reported having more than a sip or two of beer, wine or hard liquor at 10.5 years of age, while twelfth grade students reported being 13.7 years of age. Sixth grade students reported that they began drinking alcoholic beverages at least once or twice a month at 10.8 years of age, while twelfth grade students reported being 15.3 years of age. Sixth grade students were 10.5 years of age when they first smoked a cigarette (even just a puff), whereas twelfth grade students were 13.3 years of age. Sixth grade students were 10.9 years of age when they first smoked marijuana, while twelfth grade students were 14.6 years of age.

Exhibit 3-3. Average Age of First Use

	Grade 6		Grade 8		Grade 10		Grade 12	
More than a sip of beer, wine, or hard liquor	10.5	\bar{x}	11.4	\bar{x}	12.5	\bar{x}	13.7	\bar{x}
	1242	<i>n</i>	2251	<i>n</i>	2982	<i>n</i>	2097	<i>n</i>
	0.8	<i>SD</i>	1.4	<i>SD</i>	2.0	<i>SD</i>	2.4	<i>SD</i>
Began drinking at least once or twice a month	10.8	\bar{x}	12.3	\bar{x}	14.0	\bar{x}	15.3	\bar{x}
	259	<i>n</i>	933	<i>n</i>	1663	<i>n</i>	1349	<i>n</i>
	1.0	<i>SD</i>	1.3	<i>SD</i>	1.5	<i>SD</i>	1.6	<i>SD</i>
Smoked a cigarette, even just a puff	10.5	\bar{x}	11.3	\bar{x}	12.3	\bar{x}	13.3	\bar{x}
	940	<i>n</i>	1887	<i>n</i>	2489	<i>n</i>	1725	<i>n</i>
	0.8	<i>SD</i>	1.3	<i>SD</i>	1.8	<i>SD</i>	2.3	<i>SD</i>
Smoked marijuana	10.9	\bar{x}	12.0	\bar{x}	13.5	\bar{x}	14.5	\bar{x}
	220	<i>n</i>	1084	<i>n</i>	1924	<i>n</i>	1409	<i>n</i>
	1.2	<i>SD</i>	1.2	<i>SD</i>	1.5	<i>SD</i>	1.8	<i>SD</i>

Current use of alcohol and other drugs

Although the trends in Exhibit 3-2 are of great concern, it is important to keep in mind that they reflect in part experimental use. Lifetime prevalence is, again, the percentage of students who have ever tried a substance, even if on only one occasion. An indicator of more current use is represented by students' responses to questions about their use of various substances in the previous month. The WSSAHB has more limited coverage of substances in this time period (and did not cover 30-day use at all in 1988), but trends over time in current use can be examined for smoking tobacco, alcohol, marijuana, and cocaine. Exhibit 3-4 details the prevalence of use in the past month for various substances since 1988.

The following highlights may be seen in this exhibit:

- Among sixth grade students, from 1990 to 1998 the prevalence of alcohol use in the past 30 days increased from 11.8 percent to 13.8 percent, the prevalence of smoking tobacco use nearly doubled from 2.4 percent to 4.7 percent, and the prevalence of marijuana use more than doubled from 1.3 percent to 3.4 percent. However, there was little increase in current ATOD use from 1995 to 1998.

- Among eighth grade students, from 1990 to 1998 the prevalence of alcohol use in the past 30 days increased slightly from 29.1 percent to 31.0 percent, the prevalence of smoking tobacco fluctuated but showed a net increase from 12.1 percent to 15.2 percent, the prevalence of marijuana use more than doubled from 7.6 percent (1990) to 16.2 percent (1995) and then remained unchanged in 1998 (16.5 percent), and the prevalence of cocaine use fluctuated but showed a net decrease from 3.1 percent to 2.5 percent. However, there was little increase in current ATOD use from 1995 to 1998, and there was a decrease in tobacco use.
- Among tenth grade students, from 1990 to 1998 the prevalence of alcohol use in the past 30 days decreased from 1990 to 1995 but returned to previous levels in 1998 (44.9 percent), the prevalence of smoking tobacco steadily increased from 15.5 percent to 21.8 percent, the prevalence of marijuana use more than doubled from 10.6 percent to 26.6 percent, and the prevalence of cocaine use increased from 2.1 percent (1990) to 3.2 percent (1995). From 1995 to 1998 there was an increase in alcohol use and a decrease in smokeless tobacco use.
- Among twelfth grade students, from 1990 to 1998 the prevalence of alcohol use in the past 30 days decreased from 1990 to 1995 but returned to previous levels in 1998 (52.0 percent), the prevalence of smoking tobacco steadily increased from 20.7 percent to 28.6 percent, the prevalence of marijuana use nearly doubled from 15.9 percent to 28.7 percent, and the prevalence of cocaine use decreased from 1990 to 1995 but returned to previous levels in 1998 (2.7 percent). From 1995 to 1998 there was a continued increase in alcohol, smoking tobacco and marijuana use, but a decrease in smokeless tobacco use.

These trends are discussed more fully in the following sections, which address the substances of alcohol, tobacco, and other specific drugs.

**Exhibit 3-4. Prevalence of Alcohol, Tobacco,
and Other Drug Use in the Past 30 Days: 1988–1998**

Grade 6

Substance	1990	1992	1995	1998	Change '95-'98
1 Alcohol	11.8	12.8	12.2	13.8	1.6
2 Tobacco, smoking	2.4	2.8	4.3	4.7	0.4
3 Tobacco, smokeless			3.6	3.5	-0.1
4 Marijuana	1.3	1.3	3.1	3.4	0.3
5 Hallucinogens				1.3	
6 Inhalants			2.7	3.2	0.5
7 Cocaine			1.0	1.1	0.1
8 "Other illegal drugs"		1.4	1.3		
9 Heroin				0.6	
10 Amphetamines				1.4	
11 Methamphetamine				0.9	

Note: Blank entries indicate a substance was not represented on that particular year's survey.

Grade 8

Substance	1990	1992	1995	1998	Change '95-'98
Alcohol	29.1	24.0	30.1	31.0	0.9
Tobacco, smoking	12.1	10.3	18.8	15.2	-3.6
Tobacco, smokeless			11.5	6.7	-4.8
Marijuana	7.6	6.1	16.2	16.5	0.3
Hallucinogens				3.8	
Inhalants			7.3	6.6	-0.7
Cocaine	3.1	2.0	3.6	2.5	-1.1
"Other illegal drugs"	5.4	5.0	6.9		
Heroin				1.3	
Amphetamines				3.9	
Methamphetamine				2.3	

Note: Blank entries indicate a substance was not represented on that particular year's survey.

Grade 10

Substance	1990	1992	1995	1998	Change '95-'98
Alcohol	44.0	40.0	37.0	44.9	7.9
Tobacco, Smoking	15.5	17.1	20.9	21.8	0.9
Tobacco, Smokeless			15.3	9.6	-5.7
Marijuana	10.6	13.2	23.0	26.6	3.6
Hallucinogens				5.8	
Inhalants			5.4	3.9	-1.5
Cocaine	2.1	2.1	3.2	3.2	0.0
"Other Illegal Drugs"	7.2	7.3	6.1		
Heroin				1.3	
Amphetamines				5.6	
Methamphetamine				3.8	

Note: Blank entries indicate a substance was not represented on that particular year's survey.

Grade 12

Substance	1990	1992	1995	1998	Change '95-'98
Alcohol	52.0	51.8	44.8	52.0	7.2
Tobacco, Smoking	20.7	22.3	24.0	28.6	4.6
Tobacco, Smokeless			18.2	12.4	-5.8
Marijuana	15.9	17.3	23.3	28.7	4.4
Hallucinogens				6.0	
Inhalants			2.7	2.3	-0.4
Cocaine	2.6	2.0	1.9	2.7	0.8
"Other Illegal Drugs"	8.8	8.2	5.1		
Heroin				0.7	
Amphetamines				3.6	
Methamphetamine				2.9	

Note: Blank entries indicate a substance was not represented on that particular year's survey.

Alcohol

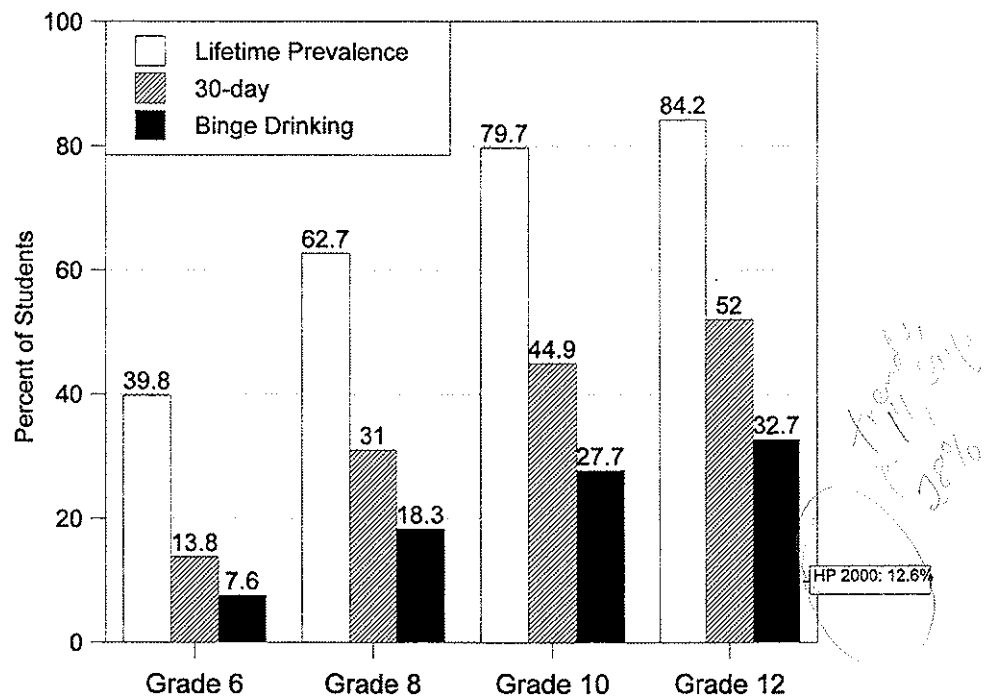
From Grade 8 onward, more than half of the students who have ever tried alcohol are current drinkers.

Alcohol has been reported as the substance of choice (i.e., most frequently used) of Washington's students in each of the four previous state surveys. In Exhibit 3-5, three standard indicators of alcohol use are presented for all participating grade levels: lifetime prevalence, 30-day use, and binge drinking.

◆ Finding ◆

From Grade 8 onward, nearly half or more of the students who have ever tried alcohol are current drinkers. Among sixth and eighth grade students, over half of current drinkers had engaged in binge drinking in the past two weeks. Among eighth, tenth, and twelfth grade students, over 60 percent of current drinkers had engaged in binge drinking in the past two weeks.

Exhibit 3-5. Alcohol Use: Grades 6, 8, 10, and 12

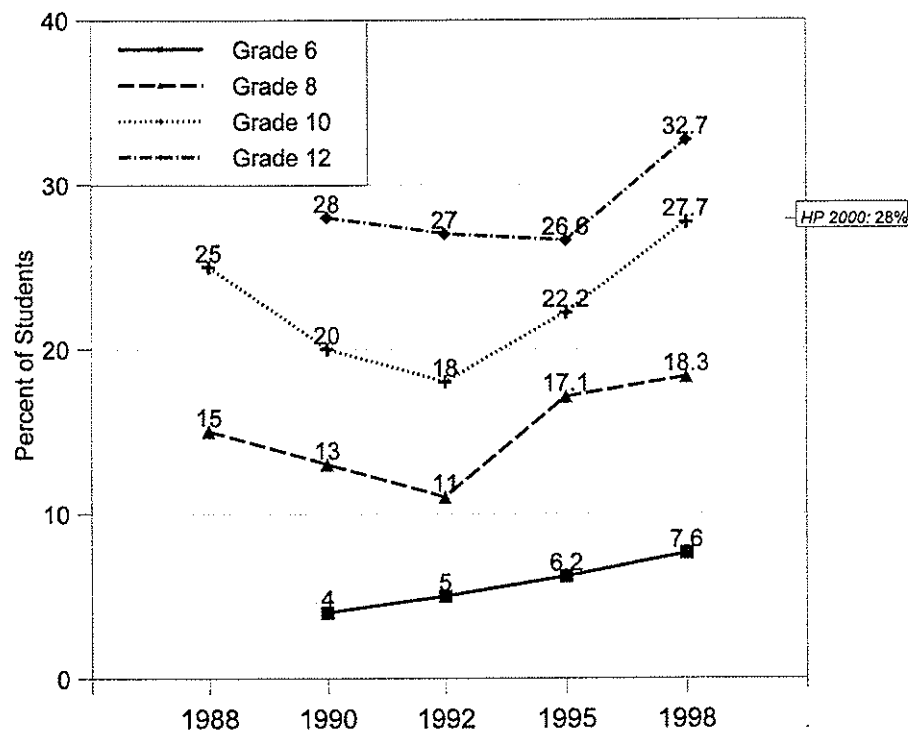


All indicators of alcohol use increased with advancing grade level. Lifetime prevalence—the percentage of students who had ever tried alcohol—ranged from 39.8 percent at sixth grade to more than eight out of ten students in twelfth grade (84.2 percent). Thirty-day use of alcohol—a commonly used indicator of current use—ranged from about 14 percent at the sixth grade level to just over half (52 percent)

◆ Finding ◆

Nearly one-third of Washington's high school seniors binge drink, a rate increase from 1995 after remaining stable over the prior five years. Early declines in rates at Grades 8 and 10 reversed themselves in 1995 and continued to rise for Grade 10 in 1998. The rates for sixth grade students have steadily increased, nearly doubling from 1992 to 1998.

**Exhibit 3-7. Trends in Prevalence of Binge Drinking in Past Two Weeks
Grades 6, 8, 10, and 12: 1988-98**



Note: High school seniors were not surveyed and sixth graders were not asked this question in 1988.

The Healthy People 2000 objective related to binge drinking is:



Reduce the proportion of high school seniors and college students engaging in recent occasions of heavy drinking of alcoholic beverages to no more than 28 percent of high school seniors and 32 percent of college students.

In 1995 the prevalence of binge drinking among Washington's high school seniors was just below the goal set in Healthy People 2000. However, in 1998 the prevalence was nearly 5 percentage points above the objective.

The prevalence of young people's experimentation with alcohol, as well as the quantity and frequency with which they consume, were combined to form a composite index of alcohol use for interpretive purposes. By combining the data from a number of items asking about different aspects of alcohol use, the study team can provide school and health officials with more global assessment of the prevalence of varying levels of problematic use of alcohol. Specific details about the scaling of this composite index are available in the technical report of this survey (Deck, et al., 1998). Because of the addition of new items or changes in wording of previously used items, this scale is different from one used by the authors in previous Washington State surveys. A consequence of this is that it is not possible to compare this year's results on this scale with previous years' results on composite scales of alcohol use. The alcohol use scale consists of four levels:

- *No Use*—Indicating having never tried one full drink of any form of alcohol.
- *Prior Use*—Indicating some experimentation with alcohol, but no use in the past 30 days.
- *Some Recent Use*—Indicating at least one full drink in the past 30 days.
- *Frequent Use*—Indicating drinking ten or more times in the past 30 days or binge drinking three or more times in the past two weeks.

By the time students are high school seniors, more than eight out of ten of them have tried alcohol.

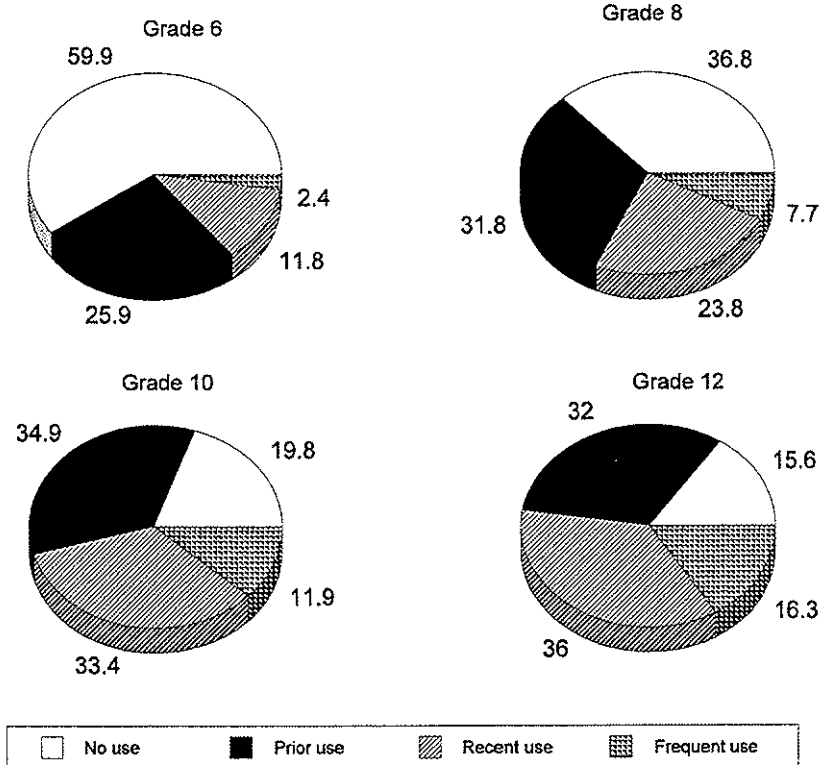
The prevalence rates of these levels of alcohol use for students at all grades are displayed in Exhibit 3-8. As reported earlier, the largest increase in any experimental use occurs between Grade 6 and Grade 8. Among sixth graders, 40 percent have at least tried some form of alcohol. At the eighth grade level, this proportion is 63 percent of the student population. By the time students are high school seniors, more

than eight out of ten (84 percent) have tried alcohol. Frequent use of alcohol is reported by 2 percent of sixth graders, increasing to 16 percent of high school seniors. This level of use is generally accepted as sufficiently problematic to require immediate assistance and often clinical intervention or treatment.

◆ Finding ◆

By eighth grade, nearly 60 percent of Washington's students have experimented with alcohol. Frequent use of alcohol—a level often thought to require clinical treatment—rises from 2 percent at Grade 6 to 16 percent for high school seniors.

Exhibit 3-8. Composite Scale: Alcohol Use
Grades 6, 8, 10, and 12



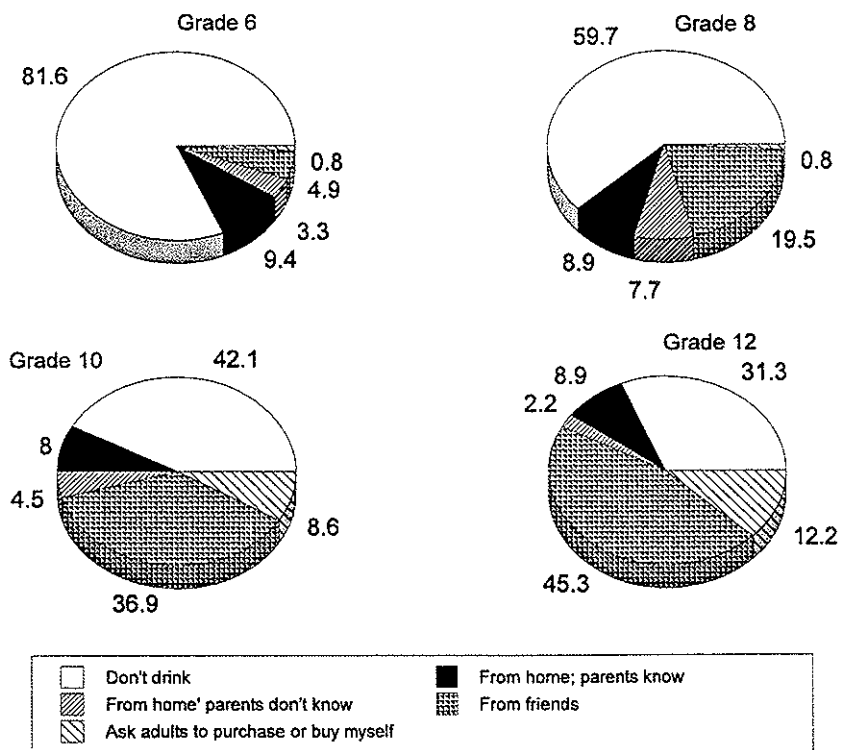
Many of the relationships among student characteristics and alcohol use found in the literature are borne out in these results for Washington students. For example, among high school students, a higher proportion of males drink more heavily than females. For example, 23 percent of the twelfth grade males reported frequent use, compared to

ten percent of the twelfth grade females. Interestingly, sixth grade males and females had similar results on the alcohol use scale. Among eighth grade students, females were more likely than males to have tried alcohol and to report some recent use. Eighth grade females were more likely than males to report some recent use, although males were more likely to report frequent use.

Among sixth grade students, half of those students who drink obtain their alcohol at home and their parents know about it. One-half to two-thirds of the eighth, tenth, and twelfth grade students who drink obtain their alcohol from friends.

Students were asked how they usually obtain alcohol. Exhibit 3-9 shows that among sixth grade students, half of those students who drink obtain their alcohol at home and their parents know about it. In contrast, one-half to two-thirds of the eighth, tenth, and twelfth grade students who drink obtain their alcohol from friends. In addition, as students get older the percentage who ask adults to buy alcohol for them or who purchase it themselves increases.

Exhibit 3-9. Method of Obtaining Alcohol
Grades 6, 8, 10, and 12



Tobacco

... smoking is estimated to be responsible for one of every five deaths in this country.

The CDC has cited tobacco use as the “single most important preventable cause of death in our society” (CDC, 1993). In the short term, it threatens the physical fitness, health, and well-being of young people, as well as foreshadows heavier use of other drugs. In the longer term, smoking is estimated to be responsible for one of every five deaths in this country (CDC, 1993).

Worldwide, tobacco is calculated to cause 3 million deaths a year, mainly from lung cancer (almost a million deaths a year and over 1.3 million new cases) and circulatory diseases. Smoking accounts for one in seven cancer deaths worldwide. Among the World Health Organization’s (WHO) recommendations for priority areas for international action is “a major intensified but sustained global campaign to encourage healthy lifestyles, with an emphasis on the healthy development of children and adolescents in relation to risk factors such as diet, exercise, and smoking” (WHO, 1997).

One does not have to be a smoker oneself to be affected by tobacco. Children exposed to environmental tobacco smoke by living with one or more smokers have been found to have lower levels of high density lipoprotein cholesterol, a type of cholesterol that protects against heart attack (Neufeld et. al., 1997). The researchers thus concluded that when these children become older they will be considered at high risk for heart attack, as well as because of the likelihood they will become smokers since one or both parents smoke.

Since the Surgeon General’s report in 1964, the public health community has put enormous effort into motivating people of all ages not to start smoking and persuading current smokers to quit. Among adults, much progress has been made. By the beginning of the 1990s, nearly half of the adults who had been smokers had quit, and the prevalence of regular smoking among adults had declined from 42 percent in 1965 to 26 percent in 1990 (CDC, 1991).

The progress is not so encouraging for adolescents. While steady declines in the use of other substances were observed through the 1980s, the prevalence of 30-day smoking tobacco use among high school seniors steadily increased from 27.8 percent in 1992 to 36.5 percent in 1997 (Johnston et al., 1997). Although 30-day use among

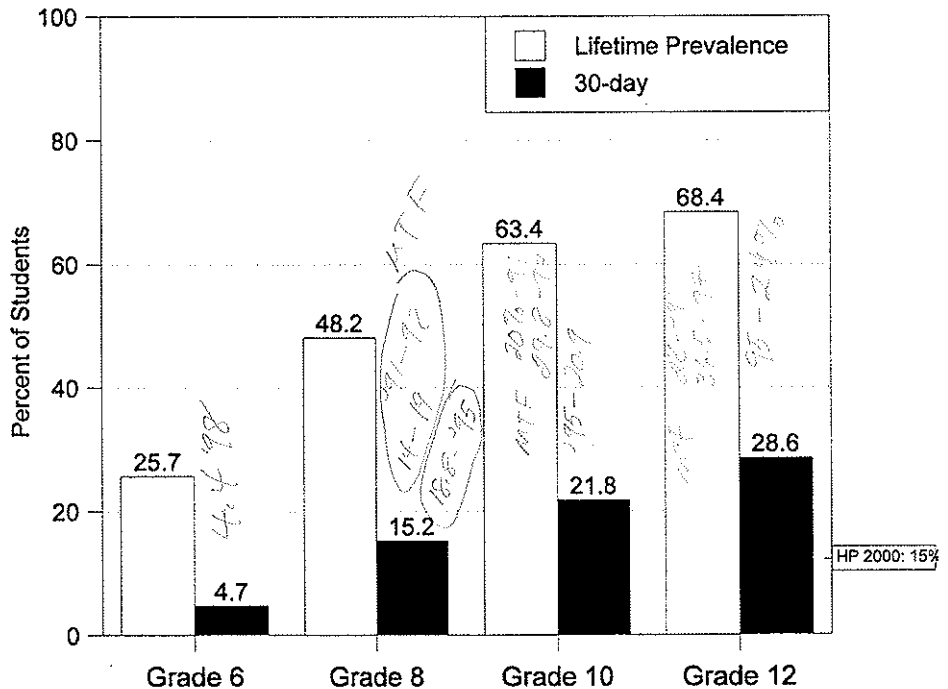
eighth and tenth grade students leveled off in 1997, it continued to increase among twelfth grade students.

Washington students' lifetime prevalence and 30-day use rates of smoking tobacco are shown in Exhibit 3-10. While approximately one in four sixth grade students have experimented with tobacco (25.7 percent, up from 20.9 percent in 1995), this percentage nearly doubles among eighth graders (to 48.2 percent, unchanged from 1995). In addition, two of three high school seniors (68.4 percent) had experimented with tobacco. Among eighth and tenth grade students, about one-third of students who had ever tried smoking have smoked in the past month. Among twelfth grade students, about four out of ten students (41.8 percent) who had ever tried smoking smoked in the past month.

◆ Finding ◆

One in four sixth grade students had already experimented with smoking cigarettes. By the end of high school, two of every three students had tried smoking. About 42 percent of these students are current smokers.

Exhibit 3-10. Smoking Tobacco Use
Grades 6, 8, 10, and 12



The Healthy People 2000 objectives include a goal for reducing the number of regular smokers at the end of their teenage years:



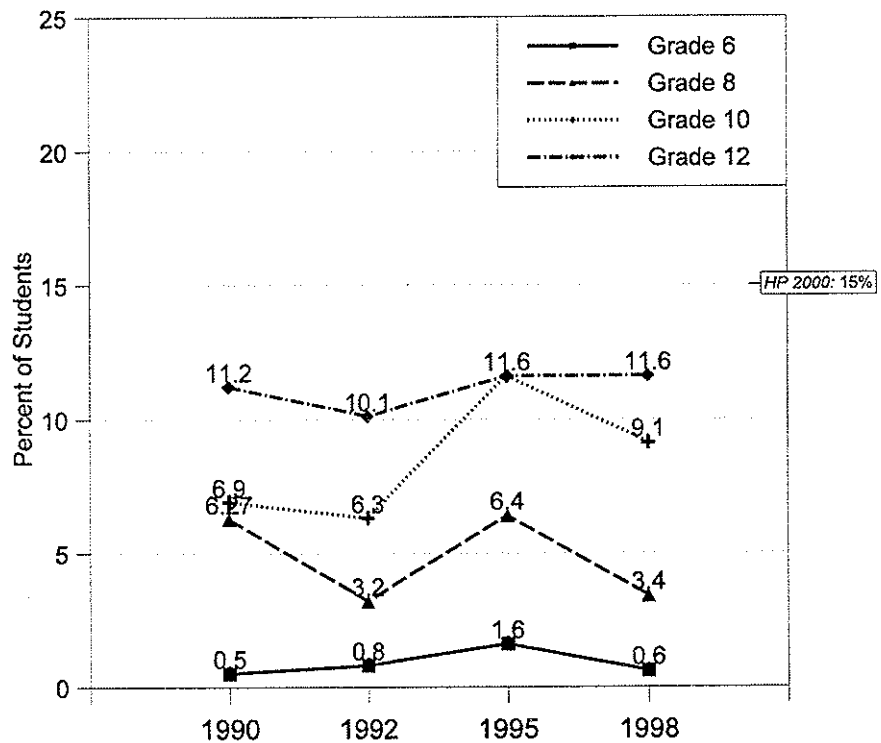
Reduce the initiation of cigarette smoking by children and youth so that no more than 15 percent have become regular smokers by age 20.

Although behavioral definitions of regular smoking include varying frequencies and quantities of cigarettes, smoking at least one cigarette each day is a generally accepted definition (CDC, 1993). The lowest quantity of daily smoking represented in the current and previous Washington surveys is more than five cigarettes per day, that is, a higher quantity than other HP 2000 objectives target. The prevalence rates at each grade of smoking more than five cigarettes per day are shown in Exhibit 3-11.

◆ Finding ◆

Nearly one of every eight twelfth grade students smokes at least five cigarettes per day; this a rate that has remained steady over the past five years. Among eighth and tenth graders, this quantity of smoking has fluctuated over the years.

Exhibit 3-11. Prevalence of Smoking More Than Five Cigarettes Per Day
Grades 6, 8, 10, and 12: 1990–98



Trends in smoking at least five cigarettes each day have fluctuated at Grades 8 and 10, but remained relatively stable among high school seniors.

Among eighth and tenth grade students, trends in smoking more than five cigarettes each day have fluctuated over the past eight years. Among high school seniors, the prevalence of smoking more than five cigarettes each day remained stable from 1992 to 1998. While the rates among high school seniors suggest attainment of the *HP 2000* objective, it is important to note that this indicator reflects heavier smoking (i.e., five or more cigarettes per day) than the generally accepted definition of regular smoking (at least one cigarette per day).

The use of smokeless tobacco has increased dramatically in the past two decades. Since 1970 snuff use nationally increased fifteenfold and chewing tobacco use has increased fourfold among males aged 17 to 19 (PHS, 1989). The health consequences of prolonged use of smokeless tobacco are severe. Long-term users are 50 times more likely to contract oral cancer than are nonusers of smokeless tobacco.

... approximately 8 percent of Washington's students in Grades 6 to 12 are current users of smokeless tobacco (down from approximately 12 percent in 1995). This rate still exceeds the national health objective from Healthy People 2000.

The lifetime prevalence and 30-day prevalence rates of smokeless tobacco use among Washington's students are shown in Exhibit 3-12. As with other substances, the use rates rise most dramatically between sixth and eighth grade. Whereas approximately 8 percent of sixth graders had tried smokeless tobacco at least once in their lifetime, this rate nearly doubled (to 14.8 percent) by eighth grade and continued to rise steadily through the high school years. By the time the students were high school seniors, more than one-third (35.0 percent) of them had experimented with smokeless tobacco, and about one-third of those (12.4 percent) current users. Clearly, prevention efforts need to focus intensely on the use of smokeless tobacco. A weighted average across grades indicates that approximately 8 percent of Washington's students in Grades 6 to 12 are current users of smokeless tobacco (a decrease from approximately 12 percent in 1995). This rate reflects progress toward the Healthy People 2000 objective, although it is still twice the targeted rate:



Reduce smokeless tobacco use by males aged 12 through 24 to a prevalence of no more than 4 percent.

◆ Finding ◆

Rate of current use of smokeless tobacco nearly doubled from Grade 6 to Grade 8 and continued to rise through high school. One in eight high school seniors (12 percent) is a current user of smokeless tobacco, a decrease from 18 percent in 1995.

Exhibit 3-12. Smokeless Tobacco Use
Grades 6, 8, 10, and 12

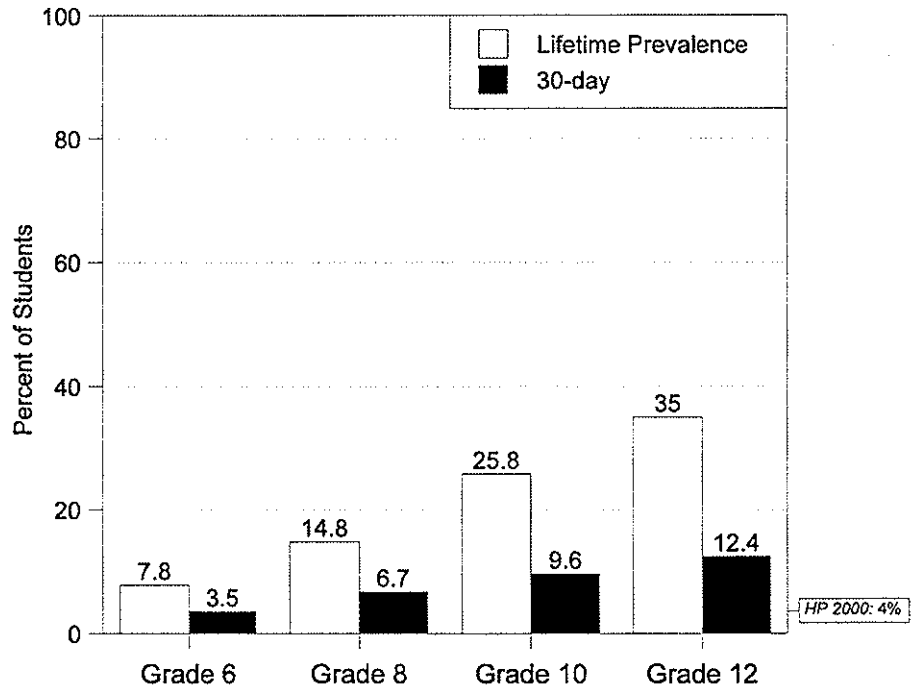
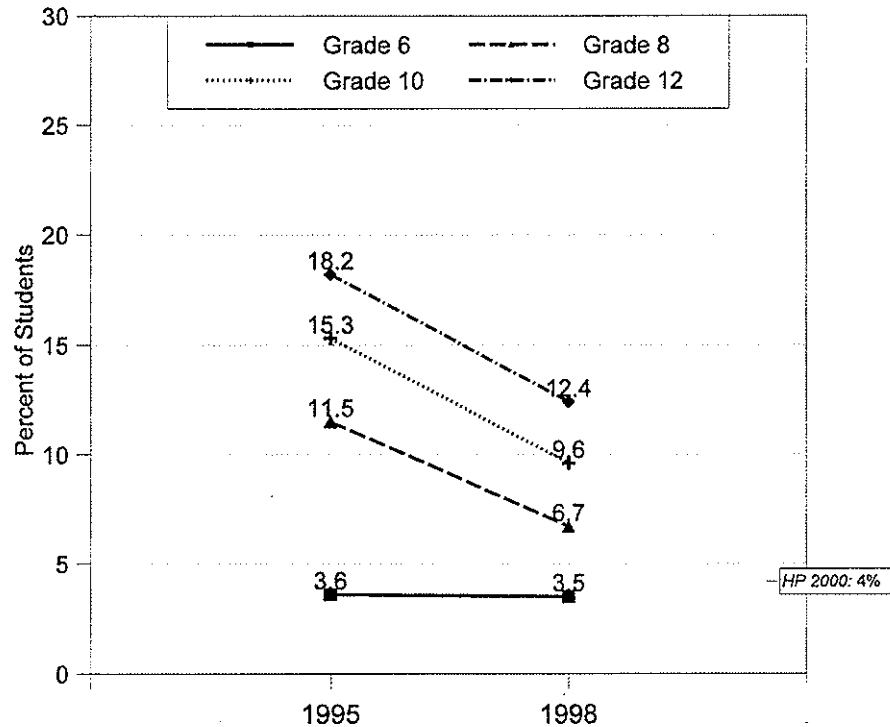


Exhibit 3-13 illustrates the decrease in 30-day smokeless tobacco use from 1995 to 1998 among eighth, tenth, and twelfth grade students.

◆ Finding ◆

From 1995 to 1998 there was a significant decrease in the percentage of eighth, tenth, and twelfth grade students who reported current use of smokeless tobacco.

Exhibit 3-13. 30-Day Smokeless Tobacco Use

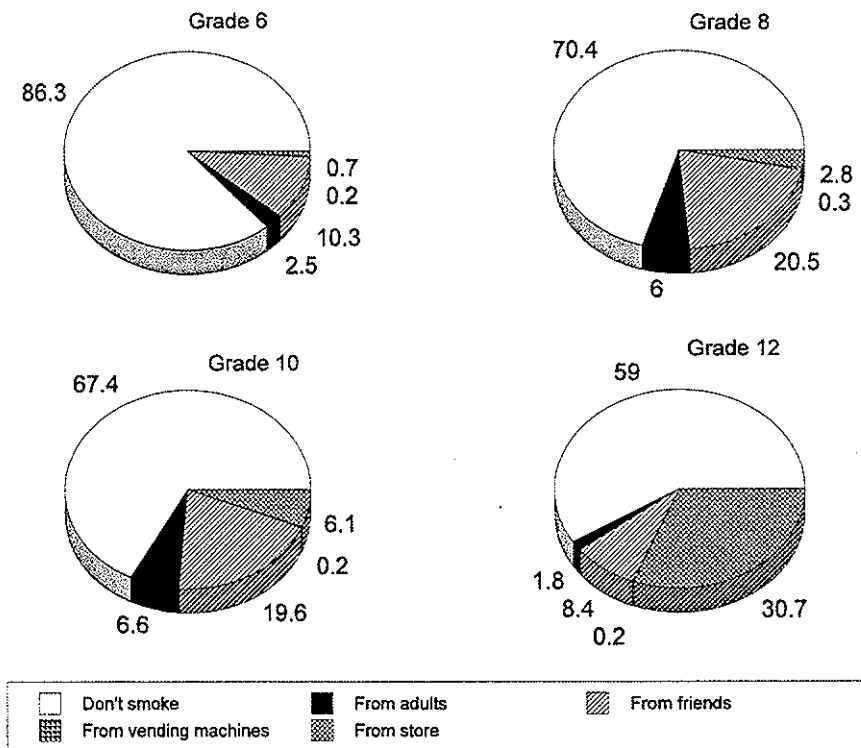


As with alcohol, there are important differences in the prevalence of cigarette smoking and the use of smokeless tobacco among males and females. Although the percentage of males and females who are current cigarette smokers is similar for sixth grade students, more females than males are current smokers among eighth, tenth, and twelfth grade students. Smokeless tobacco use is far more characteristic of males than females at all grades. For example, among high school seniors 19 percent of the males have used smokeless tobacco in the past 30 days, whereas only 6 percent of females have done so.

Sixth, eighth, and tenth grade students who smoke are most likely to obtain their cigarettes from friends. Twelfth grade students who smoke are most likely to obtain their cigarettes from a store.

Students were asked how they usually obtain cigarettes. Figure 3-14 shows that of those sixth, eighth, and tenth grade students who smoke, 60 to 75 percent obtain their cigarettes from friends. In contrast, of those twelfth grade students who smoke, 75 percent obtain their cigarettes from a store. Only a handful of students obtain their cigarettes from a vending machine.

Exhibit 3-14. Method for Obtaining Cigarettes
Grades 6, 8, 10, and 12



Illicit drugs

Clearly, the middle school years are a period that sees rapid increases in students' experimentation with illicit drugs.

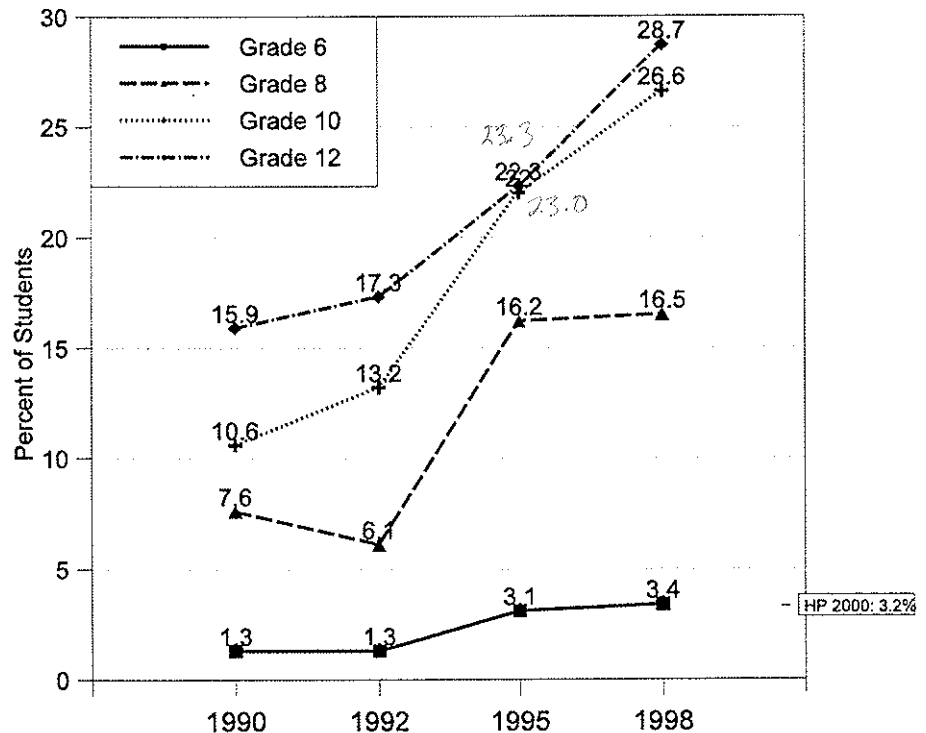
Data in this report indicate that the lifetime prevalence of illicit drug use has increased among Washington's sixth, tenth, and twelfth grade students since 1995. Although increases in experimental use are a concern, the level of current use may signal a need for more prevention and intervention in schools and communities. Among illicit drugs, marijuana use remained essentially stable among sixth and eighth grade students, although it increased among tenth and twelfth grade students, as shown in Exhibit 3-15. Nationally, the 30-day prevalence of marijuana use among eighth grade students tripled from 1991 to 1996 and then decreased slightly in 1997 (10.2 percent), more

than doubled for tenth grade students before leveling off in 1997 (20.5 percent), and nearly doubled for twelfth grade students to 23.7 percent in 1997 (Johnston et al., 1997).

◆ Finding ◆

Current use of marijuana has risen sharply since 1992 in all but Grade 6. At Grade 8, the rate almost tripled from 1992 to 1995, but has leveled off in 1998 (16.5 percent). More than one in four tenth and twelfth graders (26.6 and 28.7 percent) reported current use.

Exhibit 3-15. Trends in 30-Day Prevalence of Marijuana Use
Grades 6, 8, 10, and 12: 1990–98



A composite index of illicit drug use has been developed by the authors to provide a global estimate of the degree of experimentation and use of any illicit substance by Washington's students. Seven substances are included in the composite drug use scale: marijuana, cocaine, inhalants, hallucinogens, heroin, amphetamines, and methamphetamines. Again, due to changes in the 1998 survey

instrument, this scale differs from its predecessors, and no comparison with previous surveys' drug use composite scales can be made. Details of the construction of the current drug use scale are available in the technical report (Deck et al., 1998). The authors defined four levels of illicit drug use based on these items:

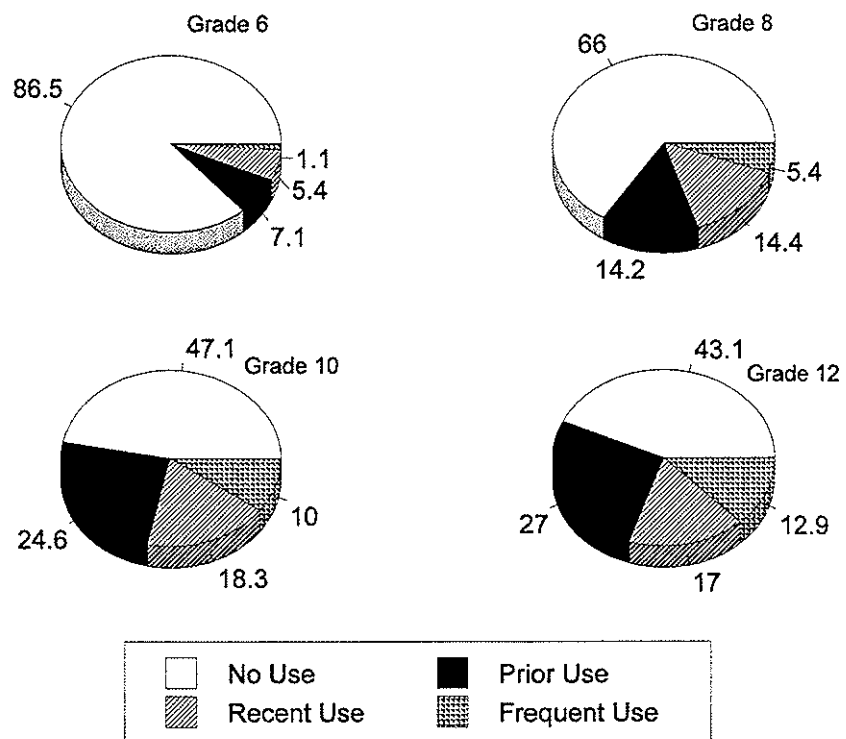
- *No Use*—Indicating no use of any drugs in lifetime.
- *Prior Use*—Indicating some experimentation in lifetime, but no current (30-day) use of any substance.
- *Recent Use*—Indicating use of at least one substance in past 30 days.
- *Frequent Use*—Indicating use of at least one substance ten or more times in the past 30 days or cocaine three or more times in the past 30 days.

The proportions of students at each grade exhibiting these levels of illicit drug use are given in Exhibit 3-16. The data indicate that fewer than 15 percent of sixth grade students had ever tried an illicit drug. However, this rate more than doubled among eighth graders (to 34.0 percent) and continued increasing through adolescence to more than half (56.9 percent) of all high school seniors. Clearly, the middle school years are a period that sees rapid increases in student experimentation with illicit drugs.

◆ Finding ◆

Less than 15 percent of sixth graders had experimented with illicit drugs. This number more than doubles to 34 percent at the eighth grade level. By the time Washington's students reach their senior year in high school, more than half of them had tried an illicit drug (56.9 percent).

Exhibit 3-16. Composite Scale: Illicit Drug Use
Grades 6, 8, 10, and 12

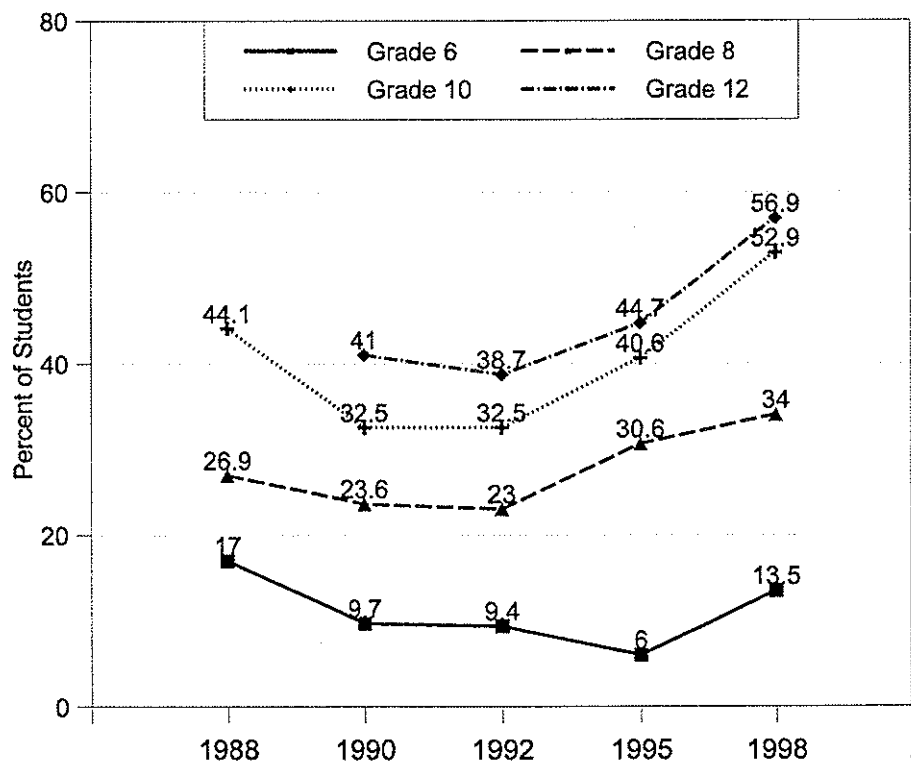


As mentioned above, direct comparisons with previous years on this composite index of illicit drug use cannot readily be made due to changes in the construction of the 1995 survey instrument and wording of the items. However, at the most global level—prevalence of trying any illicit substance—comparisons over time can be made. Results from the 1988, 1990, 1992, and 1995 surveys are shown in Exhibit 3-17. As was noted for a number of specific substances earlier and consistent with national trends, a significantly higher proportion of Washington's students exhibited some level of illicit drug use at Grades 8, 10, and 12 in 1998 than in earlier years.

◆ Finding ◆

The decline in the rate of sixth grade students experimenting with illicit drugs from 1988 to 1995 reversed (and more than doubled) in 1998. At all other grades there has been a steady increase from 1992 to 1998 in the percentage of students who have tried illicit drugs.

Exhibit 3-17. Trends in Percent of Students Using Any Illicit Drug
Grades 6, 8, 10, and 12: 1988–98



Note: High school seniors were not surveyed in 1988.

There were no differences in the percentages of males and females who had ever used drugs, except among twelfth grade students (55 percent of females had tried drugs, compared to 59 percent of males). However, beyond the sixth grade a higher proportion of males than females reported frequent drug use. For example, among twelfth grade students 17 percent of males reported frequent drug use, compared to 9 percent of females.

Attitudes toward ATOD use

The rise in illicit drug use that has occurred during this decade has been at least partially attributed to the “erosion of anti-drug attitudes and norms” in this decade (Johnston, et al., 1994a) as well as the dramatic decline in both funding for prevention programs and attention to anti-drug messages in the media (CADCA, 1994). One of the key attitudes influencing ATOD use is the perception of harm that smoking, excessive drinking, or regular use of marijuana causes. Bachman, Johnston, and O’Malley (1998) analyzed trends in marijuana use from 1976 to 1996. They noted:

The fundamental conclusion that was drawn from the present analyses, as well as earlier ones, is that attitudes about specific drugs—disapproval of use and perceptions of risk of harmfulness—are among the most important determinants of actual use If we want to know why marijuana use is on the rise again we need to ask why it is that [youth] have become less concerned in recent years about the risks of marijuana use, and why they do not disapprove of such use as strongly as students did just a few years earlier. The implication for prevention is that presenting such information [about risks and consequences of drug use] once does not finish the job; the messages must be repeated lest they be lost from one cohort to the next.

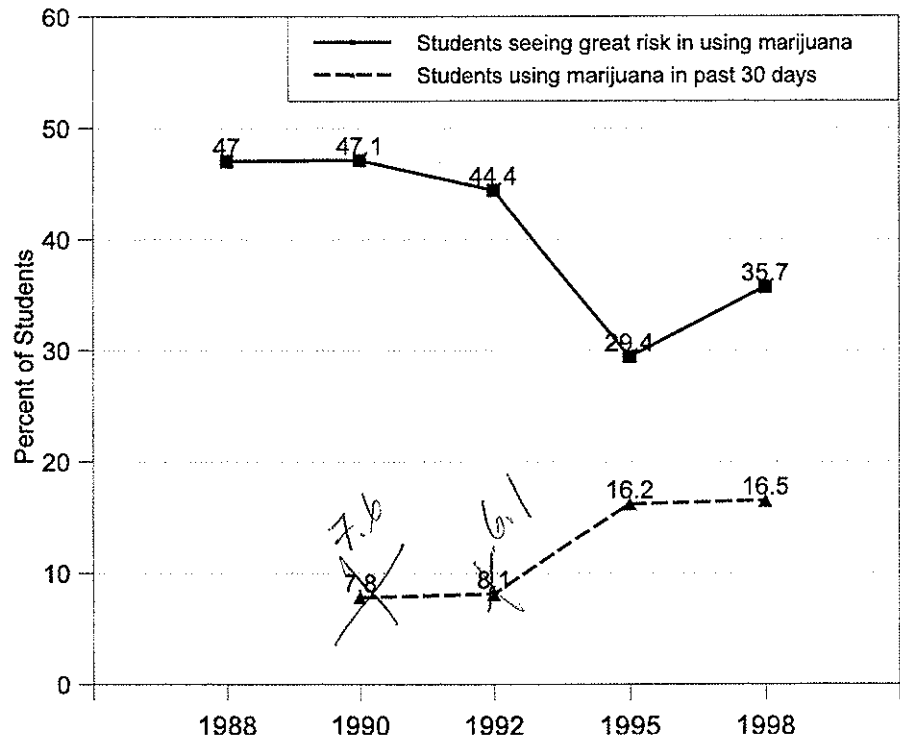
Fortunately, key attitudes and beliefs about drugs that have proven to be important determinants of use began to reverse in 1997 (Johnston et al., 1997).

The Washington State survey has included these attitude items since 1988. Their relationship to the trends in current (30-day) use of marijuana among eighth graders is shown in Exhibit 3-18.

◆ Finding ◆

Among eighth grade students from 1992 to 1995, the decline in perceived health risk of smoking marijuana was accompanied by a significant increase in this behavior. The increase in perceived health risk from 1995 to 1998 was accompanied by a leveling off of this behavior.

Exhibit 3-18. Trends in Perceived Risk and 30-Day Use of Marijuana Among Eighth Grade Students in Washington: 1988–98



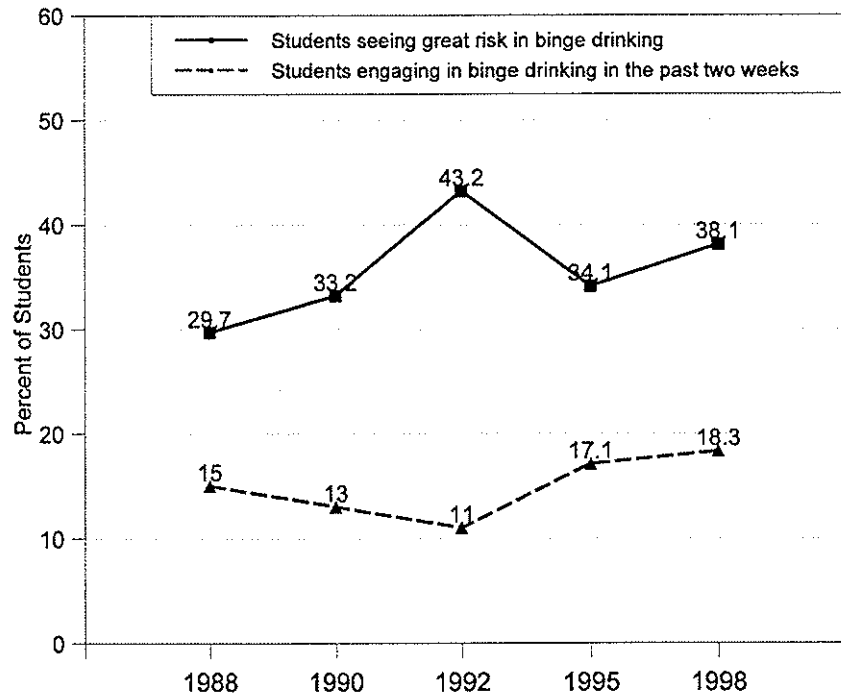
From 1988 to 1992, nearly half of all eighth graders saw great risk in smoking marijuana occasionally. This percentage dropped significantly in 1995 to only 29.4 percent, and then increased significantly in 1998 to 35.7 percent. As illustrated in Exhibit 3-18, trends in recent marijuana use among eighth graders increased from 1992 to 1995 corresponding to this decrease in perceived risk of marijuana use and leveled off in 1998, corresponding to the increase in perceived risk. Among twelfth grade students, the declines in perceived health risk continued to 1998, accompanied by a continued increase in use.

A similar relationship exists between perceived risks of binge drinking and the actual prevalence of binge drinking among eighth graders. These results are shown in Exhibit 3-19.

◆ Finding ◆

Among eighth grade students from 1992 to 1995, the decline in perceived health risk of binge drinking was accompanied by a significant increase in this behavior. The increase in perceived health risk from 1995 to 1998 was accompanied by an unchanged rate in this behavior.

Exhibit 3-19. Trends in Perceived Risk and Binge Drinking in the Past Two Weeks Among Eighth Grade Students: 1988–98



As with marijuana use, there is a strong correlation between the decrease in perceived risk of binge drinking and the increase in this behavior over time, as Exhibit 3-19 illustrates. From 1988 through 1992 there was a gradual increase in the percentage of students who saw great risk in having five or more drinks once or twice each weekend. In 1995 this percentage declined significantly from the 1992 level. Correspondingly, reports of binge drinking in the past two weeks from eighth graders declined slightly from 1990 to 1992, but increased significantly in 1995.

From 1995 to 1998, there was a small increase in the percentage of students who saw great risk in binge drinking and a corresponding unchanged rate in the percentage of students who engaged in this behavior. Among tenth and twelfth grade students, the perceived risk was unchanged from 1995 to 1998, while the rate of binge drinking increased.

These relationships may not be conclusive proof of the causal influence of attitudes on behavior—indeed, some would argue that the behavior occurs first and attitudes are formed to support the behavior—but the strong inverse association of these trends is strongly suggestive of the close link between perceived health risk and actual behavior.

In addition to responding to questions about their own perception of health risks, students were asked whether they thought their close friends would approve or disapprove of various risky behaviors. Approximately 85 percent of sixth graders indicated their friends would disapprove of occasional marijuana use and 78 percent indicated their friends would disapprove of binge drinking. This proportion declined gradually across the grades to high school seniors who reported fewer than half (48.4 percent) of their friends would disapprove of occasional marijuana use and 42.3 percent of them would disapprove of binge drinking. These are both well below Healthy People 2000 objectives:



Increase the proportion of high school seniors who perceive social disapproval associated with heavy use of alcohol, occasional use of marijuana (alcohol—70 percent, marijuana—85 percent).

Sources of information and help

The passage of the Anti-Drug Abuse Act of 1986 initiated substantially increased federal funding for school- and community-based prevention programs. The Washington Omnibus Alcohol and Controlled Substances Act followed suit, allocating funds to more than 20 programmatic efforts statewide. The investment from both of these sources has provided a variety of avenues for information and assistance to students across the state.

Two-thirds of all sixth, tenth, and twelfth grade students indicated that their school provided a counselor or intervention specialist “for students

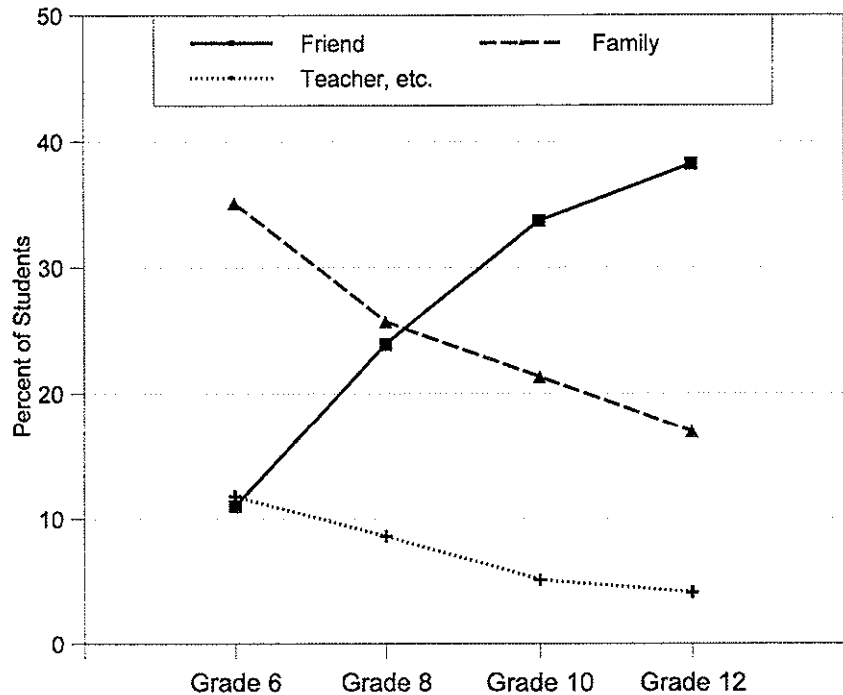
to discuss problems with alcohol, tobacco, or other drugs.” A higher percentage of eighth grade students (77.3 percent) were aware of these resources. Most of the remaining students were not sure whether or not this resource was available to them.

When asked to whom they would most likely go to for information about ATOD, over one-third (35.1 percent) of sixth graders indicated they would go to someone in their family, while only one in nine (11 percent) indicated they would go to one of their friends first. This balance shifts steadily with increasing grade level, as shown in Exhibit 3-20.

◆ Finding ◆

Sixth graders are most likely to consult a family member if they have a question about alcohol, tobacco, or other drugs. Eighth graders are equally likely to consult friends or someone in their family, while high school students are far more likely to go to their friends for this information.

Exhibit 3-20. Students First Contact for Information About Alcohol, Tobacco, or Other Drugs
 Grades 6, 8, 10, and 12



By the time Washington's students are high school seniors, more than one in three (38.2 percent) would consult a friend first if they had questions about alcohol, tobacco, or other drugs. Fewer than one in six (16.9 percent) would go to a family member first. From eighth grade onward, fewer than 10 percent of students would consult a teacher, counselor, or other school staff member first. A surprisingly stable proportion of students at each grade (22 to 27 percent) indicated feeling that they would "never need information about this." These percentages are similar to those reported in 1995.

Chapter 4: Risk and Protective Factors for Adolescent Health Risk Behaviors

The array of adolescent health risk behaviors addressed in this survey and report of the survey's findings have many implications for the students, families, schools, and communities in which they occur. Decades of research have shown that a number of *risk factors* are associated with increased likelihood of *health risk behaviors*, including ATOD abuse (Hawkins, Catalano, and Miller, 1992) and violence and delinquent behaviors (Bensley and VanEenwyk, 1995; Brewer, Hawkins, and Catalano, 1994). Similarly, *protective factors* exert a positive influence or buffer against the negative influence of risk.

The 1995 and 1998 WSSAHB included substantial coverage of risk and protective factors using standardized assessment tools (Arthur, Hawkins, Catalano, and Pollard, 1998) developed by the Social Development Research Group at the University of Washington. In the technical report that accompanies this survey (Deck et al., 1998), the reliability analyses for the scales measuring these factors are presented.

Nineteen risk factors were assessed and organized into three domains of influence as follows (the family domain was not included in the 1998 WSSAHB):

Community:

- Low neighborhood attachment
- Community disorganization
- Personal transitions and mobility
- Community laws and norms favorable toward drug use
- Perceived availability of ATOD and firearms
- Community transitions and mobility

School:

- Academic failure
- Lack of commitment to school

Peer-Individual:

- Rebelliousness
- Early initiation of antisocial behavior
- Antisocial behavior
- Attitudes favorable toward antisocial behavior
- Attitudes favorable toward drug use
- Interaction with antisocial peers
- Friends' use of drugs
- Sensation seeking
- Rewards for antisocial involvement
- Impulsiveness
- Perceived risk of ATOD use

Another body of research has focused on the abilities of young people to “overcome the odds” (Werner and Smith, 1993) and succeed in spite of a preponderance of risk in their environments. Benard (1991) summarized this literature on *protective factors*, citing the longitudinal research of Werner and Smith (1992) and Rutter (1979) in the formulation of the construct termed “resilience.” Resnick, et al. (1997) found that parent-family connectedness and perceived school connectedness were protective against every health risk behavior measured in their study except history of pregnancy. Parental expectations regarding school achievement and school connectedness were also associated with lower levels of health risk behaviors (except in the case of suicidality, in which only parent-family connectedness was protective).

Protective factors identified through research from Hawkins and Catalano include individual protective characteristics; social bonding to family, school, community, and peers; and healthy beliefs and clear standards for behavior. For bonding to serve as a protective influence, the bonding must occur through involvement with individuals who communicate values and set clear standards for behavior. The

protective processes of rewards for conventional involvement, opportunities for positive involvement, religiosity, belief in the moral order, and social skills were assessed and organized in the three domains of community, school, and peer-individual. Research on risk and protective factors has enormous implications for prevention efforts, as succinctly articulated by Hawkins, Catalano, and Associates. These risk and protective influences are present in the major social arenas in young people's lives—their families, schools, communities, and within themselves and their peers.

Several researchers and government agencies have described a risk reduction and protective factor enhancement approach as the most promising to prevent problem behaviors (Hawkins et al., 1992; Institute of Medicine, 1994; Department of Justice, 1992). The premise of these approaches is that in order to prevent a problem before it occurs it is necessary to address those factors that predict the problem. Ideally, this entails discovering the causes of the problem behavior and influencing those causes. Today, longitudinal research has identified several factors that are potential causes of problem behaviors. Further work is necessary to determine which of these factors are truly causal. In the interim, these risk and protective factors are the most promising inputs for prevention and intervention programs and policies.

In this chapter, the authors present the results of the assessment of risk and protection at each grade in each of three domains, along with the relationship between risk and protective factors and the major health risk behaviors of alcohol use, drug use, violent behavior, and delinquent behavior under study here. In reading this chapter, remember that all results are based on students' self-reports and therefore represent their perceptions of risk and protection, which may or may not be accurate. In addition, the statistical relationships among risk and protective factors with health risk behaviors are not necessarily causal relationships. Rather, they indicate an association or co-occurrence of these factors and behaviors. For example, both the risk factor and the behavior may be associated with a third factor such as poverty or other factors which were not included in this study. Similarly, some apparent relationships may be confounded with age; for example, students are more likely to report both family management problems and drinking as they get older, which would

contribute to an association between these factors. Future analyses could examine interrelationships separately within each grade.

Community

The survey assessed six risk factors and two protective factors in the community domain. For purposes of this report, they are described briefly as follows:

Risk Factors:

- *Low neighborhood attachment*—describes the extent to which students feel a part of the neighborhood in which they live; whether they feel what they do there makes a difference in their lives.
- *Community disorganization*—describes the extent to which people in the community take part in important decisions or processes that affect their lives.
- *Personal transitions and mobility*—describes the extent to which a person has changed homes or schools.
- *Laws and norms favorable toward drug use*—describes policies a community holds in relation to health and problem behaviors which are communicated in a variety of ways—through laws, social practices, and expectations.
- *Perceived availability of ATOD and firearms*—describes the perception of availability or access to alcohol, drugs, or firearms.
- *Community transitions and mobility*—describes the extent to which individuals in a community move frequently.

wrong definition

Protective Factors:

- *Opportunities for positive involvement*—describes opportunities to participate meaningfully in activities in the community.

- *Rewards for conventional involvement*—describes rewards for positive participation in activities.

Each risk and protective factor scale is calculated as the average of one or more questions. Students whose scores placed them above the midpoint of the scale were considered “at risk” on a given risk factor or “resilient” on a given protective factor. For example, “low neighborhood attachment” is based on the average of three statements (“I like my neighborhood,” “If I had to move, I would miss the neighborhood I now live in,” and “I’d like to get out of my neighborhood”) and each of these questions was answered on a scale of 0 to 3. Thus, a person who scored above 1.5 (i.e., the midpoint) on this scale was considered “at risk.” Exhibit 4-1 details the percentage of students “at risk” and “resilient” on the risk and protective factor scales in the community domain. (Three scales are calculated somewhat differently, given that the items that make up these scales have a different pattern of response options.)

Exhibit 4-1. Profile of Community Risk and Protective Factors

	Grade 6		Grade 8		Grade 10		Grade 12		
	1995	1998	1995	1998	1995	1998	1995	1998	
R i s k	Low neighborhood attachment	20.8	19.0	23.5	25.5	25.8	27.8	22.5	28.5
	Community disorganization	8.8	5.2	8.3	8.1	8.4	6.7	7.4	4.8
	Personal transitions and mobility	17.9	17.1	17.4	17.4	17.7	16.3	14.4	13.8
	Laws and norms favorable toward drug use	10.7	10.8	22.1	26.7	33.9	41.2	41.5	49.6
	Perceived availability of ATOD and firearms		12.1	57.6	37.8	74.1	64.3	81.0	78.5
	Community transitions and mobility		29.4		27.3		25.0		22.9
	P r o t e c t i v e	Rewards for conventional involvement		62.2	42.5	48.5	37.6	44.8	39.7
Opportunities for positive involvement			74.1		71.6		73.7		77.7

Note: Figures indicate percent at risk. A blank cell indicates that this risk or protective factor was not computed for a given grade or year.

... high school students perceive the most permissive norms around ATOD use and the greatest access to ATOD and firearms.

Exhibit 4-1 illustrates two noteworthy points. First, as students get older they are at considerably increased risk on the factors of “low neighborhood attachment,” “laws and norms favorable to use,” and “perceived availability of ATOD and firearms” and at decreased resilience on the factor of “rewards for conventional involvement.” They are also at decreased risk on the factors of “personal transitions and mobility.” Second, there have been changes from 1995 to 1998 in the percentages of students at risk or resilient on some factors. In particular, there was an increase in the percentage of seniors at risk on the factor of “low neighborhood attachment” and an increase in the percentage of students in eighth grade or higher at risk on the factors of “favorable laws

and norms.” There was a decrease in the percentage of eighth and tenth grade students at risk on the factor of “perceived availability of ATOD and firearms.” There was also an increase in the percentage of eighth and tenth grade students resilient on the factor of “rewards for conventional involvement.”

The strength of the relationships between these risk and protective factors and global measures of health risk behaviors on this survey is shown in the intercorrelations presented in Exhibit 4-2. Results of the six risk and two protective factor scales are correlated with four health behavior composite scales: alcohol use, drug use, violent behavior, and delinquent behavior. A positive correlation indicates a direct relationship. For example, being at higher risk on a risk factor is associated with higher alcohol use if the two are positively correlated. A negative correlation indicates an inverse relationship. For example, being at greater resilience on a protective factor is associated with less alcohol use if the two are negatively correlated. Correlations may range between -1 (perfect inverse correlation) and +1 (perfect direct correlation); a correlation of 0 indicates that the two variables are not associated with one another. Only statistically significant correlations are reported in the exhibit. This provides the assurance that the observed relationships between the risk or protective factors with the health behavior scales is stronger than could be expected by chance or coincidence. It gives us greater confidence that the relationship is real, replicable, and has implications for prevention programs.

Exhibit 4-2. Correlations of Community Risk and Protective Factors With Health Behavior Scales

	Community Factors	Alcohol Use	Drug Use	Violent Behavior	Delinquent Behavior
R i s k	Low neighborhood attachment	0.16	0.19	0.15	0.15
	Community disorganization	0.18	0.22	0.27	0.24
	Personal transition and mobility	0.11	0.16	0.17	0.18
	Community transition and mobility	0.03	0.05	0.11	0.07
	Laws and norms favorable toward drug use	0.46	0.46	0.29	0.32
	Perceived availability of ATOD and firearms	0.56	0.53	0.32	0.34
P r o t e c t i v e	Opportunities for involvement	-0.11	-0.14	-0.17	-0.15
	Rewards for conventional involvement	-0.21	-0.23	-0.14	-0.15

Note: Figures indicate percent at risk. Only statistically significant ($p < .05$) correlation values are represented numerically in the exhibit. The direction (+ or -) of nonsignificant correlations is also indicated.

The strongest correlations between community risk factors and health risk behaviors involve “laws and norms favorable toward drug use” and “perceived availability of ATOD and firearms.”

School

School is an environment in which young people spend a great deal of time. As a result, schools have the opportunity, although not the sole responsibility, to greatly influence adolescent development. The current survey included two risk factors and two protective factors in the school domain:

Risk Factors:

- *Academic failure*—Children fail in school for many reasons, but research indicates that the very experience of failure, regardless of whether the failure is linked to the student’s ability, places him or her at higher risk of negative behavior.
- *Little commitment to school*—When young people cease to see the school role as viable, they are at higher risk of engaging in the health risk behaviors.

Protective Factors:

- *Opportunities for positive involvement*—When young people are given more opportunities to participate meaningfully in important activities at school, they are less likely to engage in problem behaviors.
- *Rewards for conventional involvement*—As in the community domain, when young people are recognized and rewarded for their contributions at school, they are less likely to be involved in health risk behaviors.

Exhibit 4-3 details the percentage of students “at-risk” or “resilient” on the risk and protective factors in the school domain.

Exhibit 4-3. Profile of School Risk and Protective Factors for 1998

		Grade 6	Grade 8	Grade 10	Grade 12
R	Academic failure	15.5	22.7	23.4	17.6
	Little commitment to school	16.9	33.7	38.2	44.4
P	Opportunities for involvement	77.7	66.9	67.6	71.8
	Rewards for conventional involvement	65.3	47.7	43.5	47.3

Note: The scales in this domain were revised (either in terms of the items or calculation) in 1998 and the results are therefore not comparable to those from 1995.

As may be seen in Exhibit 4-3, the percentage of students who showed little commitment to school increased for older students, from 16.9 percent of sixth grade students to 44.4 percent of twelfth grade students. In addition, the percentage of students who perceived rewards for conventional involvement dropped from 65.3 percent of sixth grade students to 47.7 percent of eighth grade students.

Exhibit 4-4. Correlations of School Risk and Protective Factors With Health Behavior Scales

	School Factors	Alcohol Use	Drug Use	Violent Behavior	Delinquent Behavior
R	Academic failure	0.22	0.28	0.23	0.28
	Little commitment to school	0.43	0.42	0.30	0.34
P	Opportunities for positive involvement	-0.21	-0.22	-0.20	-0.19
	Rewards for conventional involvement	-0.24	-0.21	-0.20	-0.17

Note: Only statistically significant ($p < .05$) correlation values are represented numerically in the exhibit. The direction (+ or -) of nonsignificant correlations is also indicated.

Exhibit 4-4 details the correlations between risk and protective factors in the school domain and the four health behavior scales. In this domain there were moderate correlations between the protective factor

of rewards for school involvement with drug use and delinquent behavior. Increasing rewards for school may be an area to be addressed for a drug use and delinquency prevention program for all grade levels.

Peer-Individual

The social environments of the family, school, and community greatly influence young people's behavior. In addition, many characteristics of individuals and attributes of peer groups are powerful determinants of behavior. To study this, the survey included 11 risk factors and three protective factors in the peer-individual domain:

Risk Factors:

- *Rebelliousness*—Young people who feel they are not part of society or are not bound by rules are at higher risk of engaging in problem behaviors.
- *Early initiation of problem behavior*—Research clearly shows that the earlier an individual begins using ATOD or engaging in delinquent and violent behavior, the more likely he or she is to develop problems with the behavior in adolescence.
- *Antisocial behavior*—Young people who engage in antisocial behavior are at higher risk for engaging in health risk behaviors as well.
- *Attitudes favorable toward antisocial behavior*—Young people who accept or condone antisocial behavior are more likely to engage in health risk behaviors.
- *Attitudes favorable toward drug use*—Young people who have positive or accepting attitudes toward drug use are more likely to engage in a variety of health risk behaviors.
- *Interaction with antisocial peers*—Young people who associate with peers who engage in health risk behaviors

are far more likely to engage in health risk behaviors themselves.

- *Friends' use of drugs*—Young people who have friends who use drugs are more likely to engage in health risk behaviors.
- *Sensation seeking*—Young people who seek out opportunities for dangerous, risky behavior in general are at higher risk for participating in health risk behaviors.
- *Rewards for antisocial involvement*—Young people who believe that they are favorably perceived as a result of engaging in antisocial behavior are more likely to engage in that behavior.
- *Impulsiveness*—Young people who behave impulsively are at higher risk for participating in health risk behaviors.
- *Perceived risk of ATOD use*—Young people who do not perceive a risk in using ATOD are at higher risk of engaging in use.

Protective Factors:

- *Peer rewards for conventional involvement*—Similar to the other domains, when young people are rewarded in their peer group for positive involvement, they are less likely to participate in health risk behaviors (this scale was dropped in 1998).
- *Belief in the moral order*—Young people who have a belief in what is right or wrong are at lower risk for engaging in problem behaviors.
- *Religiosity*—Describes the frequency with which youth attend religious services or activities.

- *Social skills*—Young people who are socially competent and engage in positive interpersonal relations with their peers are less likely to participate in negative health risk behaviors.

The profile of the peer-individual risk and protective factors across grade levels is shown in Exhibit 4-5.

Exhibit 4-5. Profile of Peer-Individual Risk and Protective Factors

		Grade 6		Grade 8		Grade 10		Grade 12	
		1995	1998	1995	1998	1995	1998	1995	1998
R i s k	2000 ✓ Rebelliousness	12.3	13.6	23.5	23.0	22.6	21.5	17.3	20.8
	✓ Early initiation of antisocial behavior	25.9	24.1	49.6	45.1	58.2	61.4	59.6	62.5
	✓ Antisocial behavior	6.3	4.3	10.8	11.3	15.7	15.3	12.4	16.1
	✓ Attitudes favorable toward antisocial behavior	6.3	5.1	12.3	10.5	12.2	7.8	7.0	6.2
	✓ Attitudes favorable toward drug use	4.3	4.0	19.7	17.1	22.0	26.4	30.5	32.3
	✓ Interaction with antisocial peers	9.7	8.4	21.9	21.0	26.9	21.5	24.2	19.8
	✓ Friends' use of drugs	27.2	21.5	53.2	52.7	68.5	70.5	72.4	75.1
	✓ Sensation seeking		25.0	56.0	38.8	60.1	47.9	57.3	48.8
	✓ Rewards for antisocial involvement		25.9		46.8		49.3		48.7
	✓ Impulsiveness		12.1		14.4		12.8		9.1
✓	Perceived risk of ATOD use		19.5		26.8		33.4		35.1
P r o t e c t i v e	Peer rewards for conventional involvement	✓		96.0		97.4		97.7	
	Belief in the moral order	87.1	85.4	64.9	67.4	61.7	66.4	68.4	69.3
	Religiosity		45.3		47.6		43.6		38.3
	Social skills		82.4		65.1		61.7		62.4

Note: Figure indicates percent at risk. A blank cell indicates that this risk or protective factor was not computed for a given grade or year or not comparable across years.

As may be seen in this table, as students get older they are more likely to report being at risk in terms of “attitudes favorable toward drug use” and “friends’ use of drugs.” In addition, from 1995 to 1998 there was a decrease in the percentage of students who reported being at risk in terms of “sensation seeking.”

The strength of the relationships between peer-individual risk and protective factors and health risk behaviors is shown in Exhibit 4-6.

Exhibit 4-6. Correlations of Peer-Individual Risk and Protective Factors With Health Behavior Scales

	Peer-Individual Factors	Alcohol Use	Drug Use	Violent Behavior	Delinquent Behavior
R i s k	Rebelliousness	0.38	0.36	0.36	0.33
	Early initiation of problem behavior	0.65	0.67	0.56	0.60
	Antisocial behavior	0.42	0.55	0.59	0.74
	Attitudes favorable toward drug use	0.65	0.67	0.34	0.44
	Attitudes favorable toward antisocial behavior	0.43	0.44	0.47	0.41
	Interaction with antisocial peers	0.41	0.52	0.48	0.58
	Friends' use of drugs	0.65	0.70	0.33	0.48
	Sensation seeking	0.48	0.47	0.38	0.37
	Rewards for antisocial behavior	0.27	0.27	0.23	0.22
	Impulsiveness	0.26	0.24	0.26	0.24
	Perceived risk of ATOD use	0.40	0.43	0.24	0.31
P r o t e c t i v e	Belief in the moral order	-0.46	-0.42	-0.38	-0.36
	Social skills	-0.56	-0.54	-0.41	-0.45
	Religiosity	-0.18	-0.19	-0.08	-0.14

Note: Only statistically significant ($p < .05$) correlation values are represented numerically in the exhibit. The direction (+ or -) of nonsignificant correlations is also indicated.

As in 1995, the strongest peer-individual correlate with any of the health risk behaviors is the "early initiation of problem behaviors."

As in 1995, the strongest peer-individual correlate with any of the health risk behaviors is the "early initiation of problem behaviors." As has been shown abundantly in the literature, the earlier a student begins experimenting with any of these problem behaviors, the more likely he or she is to advance to more extreme levels of that behavior and/or

experience problematic consequences in later adolescence. Other very high correlates to health risk behaviors include “friends’ use of drugs” and “attitudes favorable toward drug use.” The risk factor “interactions with antisocial peers” is also a strong correlate of delinquent behavior. In general, all of these risk factors show moderate to high relationships with the problem behaviors.

Protective factors show their strongest relationships with health risk behavior in the peer-individual domain. An internal “belief in the moral order” and “positive social skills” are strongly associated with lower levels of alcohol use, drug use, delinquent behavior, and violent behavior.

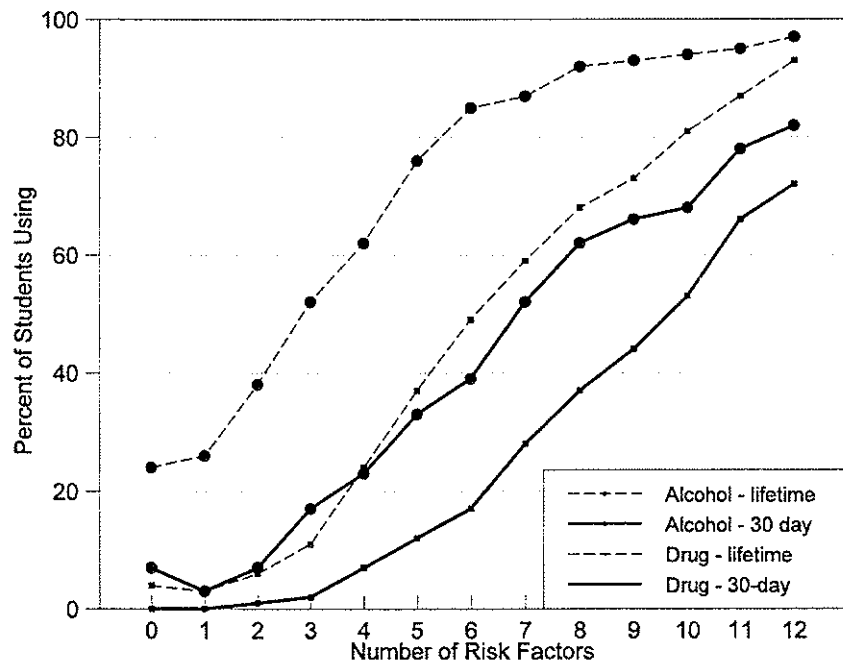
Effect of the number of risk and protective factors

The results presented so far in this chapter have dealt with risk and protective factors on an individual basis. Exhibits have been presented to show the strength of the relationship of each of these factors with health risk behaviors and grade to grade differences in the severity of risk and the level of protection on each factor. The influence of specific risk or protective factors on health risk behaviors is important to demonstrate as it can provide useful guidance to state and local prevention efforts.

Research has also suggested that there is a cumulative effect in the influence of risk and protection on these health risk behaviors (Bry, McKeon, and Pandina, 1982; Newcomb, Maddahian, and Skager, 1987; Werner and Smith, 1992). That is, in addition to the specific influence of a given risk or protective factor, it is important to examine the relationship between multiple risk or protective factors and these behaviors. This examination helps illustrate whether students who are at high risk on more influential risk factors are more likely to engage in health risk behaviors than those who are at high risk on fewer factors. It also helps show whether students who are well-protected, in terms of opportunities and rewards for involvement in community and school activities, are less likely to engage in these behaviors than students who are less protected. Data from the 1998 WSSAHB are available to address these topics.

Exhibit 4-7 displays the relationship between the number of risk factors present and the use of alcohol and other drugs. To assess this relationship, students participating in the survey were classified as to whether they were at high risk on none, one, two, three, etc., of the risk factors assessed on the 1998 WSSAHB. Twelve risk factors were used as the maximum because there were too few students in the groups possessing more than 12 risk factors to provide stable estimates of alcohol and other drug use. Once these groups were formed, the prevalence rates of alcohol use (both lifetime and 30-day) and other drug use (both lifetime and 30-day) were calculated. These group means were then plotted to display the relationship shown in Exhibit 4-7.

Exhibit 4-7. The Relationship Between Alcohol and Drug Use With the Number of Risk Factors Reported by Washington Students



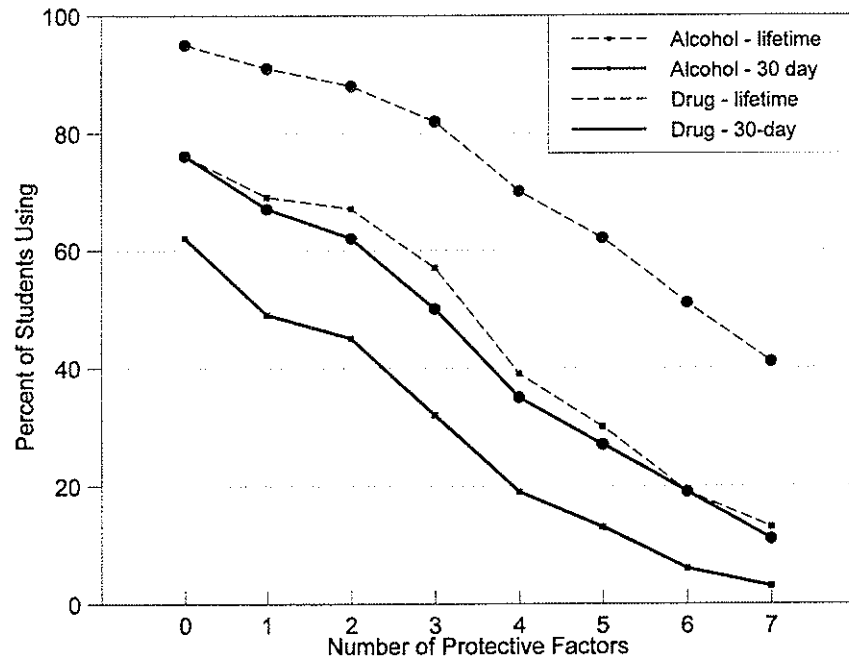
Perhaps the most obvious interpretation is the clear, linear relationship between the number of risk factors present and the prevalence of alcohol and other drug use, both lifetime and 30-day. In other words, it is emphatically the case that, as the number of risk factors for individual students increases, they are more likely to use alcohol and

other drugs. There are also subtle differences in these relationships, depending upon which health risk behavior is under study. For example, there is little difference in the lifetime prevalence of alcohol for students who have more than six risk factors. At the other extreme, there is little difference in drug use among students who have two or fewer risk factors. These findings are consistent with those from the previous statewide survey (Gabriel et al., 1995).

While specific patterns of risk and their relationships with individual health risk behaviors can be more thoroughly studied, the results shown in Exhibit 4-7 clearly reaffirm the cumulative effect of multiple risks on alcohol and other drug use—the more risk factors present, the greater the likelihood of alcohol and other drug use.

A similar display relating the presence of protective factors to alcohol and other drug use is shown in Exhibit 4-8. Again, the overall relationship is a strong one, with increased levels of protection (i.e., the presence of several protective factors in students) clearly associated with lower rates of alcohol and other drug use. Protective factors have also been found to have a moderating effect on the presence of risk factors (DeWit, Silverman, Goodstadt, and Stoderto, 1995; Jessor et al., 1995; Gabriel et. al., 1997).

Exhibit 4-8. The Relationship Between Alcohol Use, Drug Use, and the Number of Protective Factors Reported by Washington Students



Source: 1998 WSSAHB

Summary

In summary, the influence of the risk and protective factors on key health risk behaviors among adolescents is once again supported by the reports of Washington students in this survey effort. In general (and similar to the results reported in 1995):

- Sixth graders report the lowest risk and highest levels of protection in the peer-individual domain. The pattern across grades is less uniform in the school and community domains.
- Of all risk and protective factors, those in the peer-individual domain show the strongest relationships with health risk behaviors.
- In general, school and community risk and protective factors show weak relationships with health risk behaviors, although a few of these factors are moderately correlated with the health

risk behaviors. Specifically, the community protective factor and laws and norms favorable to use are strongly correlated with alcohol and other drug use.

- The cumulative effect of risk and protection on alcohol and other drug use is quite evident among Washington students. Students at high risk on a larger number of risk factors are increasingly more likely to use alcohol and other drugs while students possessing a larger number of protective factors are increasingly less likely to use alcohol and other drugs.

Finally, the data presented here are the results for the state as a whole. The level of these indicators of risk and protection will likely vary widely by community, and a community profile will show the extent to which students in a given community experience important risk and protective factors. These data can be compared to state levels to provide an indication of which risk and protective factors are priorities for a community to address. Once these priorities have been determined, specific populations and/or geographical areas where risk exposure is high and protection is low can be identified and targeted for intensive interventions.

Chapter 5: Characteristics of the Students Surveyed

Students from all geographic regions, urban and rural schools, and students of all races/ethnicities were included in the survey.

The findings of the *Washington State Survey of Adolescent Health Behaviors* presented in this report are based on the responses of 14,601 students in Grades 6, 8, 10, and 12. These students were selected using a scientific sampling plan designed by the authors to represent the full population of nearly 300,000 students at these grade levels across the state. Students from all geographic regions, urban and rural schools, and students of all races/ethnicities were included in the survey. Full details of the sampling plan and its representativeness of the target population are included in the technical report of this survey (Deck et al., 1998).

In this chapter, the authors describe the students participating in the survey in terms of a variety of background characteristics and participation in activities in their schools and communities. Throughout this report, findings have been disaggregated by these characteristics whenever they represent important variations in the incidence and prevalence of the health behaviors under study. The specific characteristics included in this chapter are:

- Gender
- Race/ethnicity
- Geographic region
- Urban/rural/suburban school
- Number of adults and other children at home
- Working at a part-time job

Gender

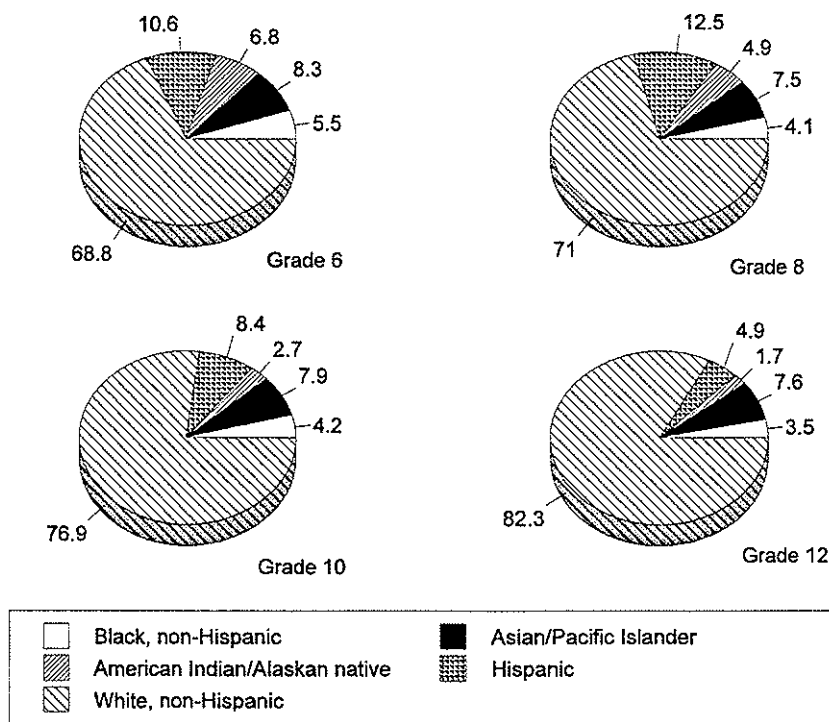
Males and females were nearly equally represented at all grades. The largest deviation from a 50-50 split occurs at the eighth grade level, for which the sample consists of 51.4 percent females. This percentage closely matches the distribution of population of students in the state (the largest difference is among eighth graders, where females are over-represented by 2.4 percent). Gender is an important characteristic

to keep in mind when interpreting the incidence and prevalence of health behaviors.

Race/ethnicity

Students were asked to identify which racial/ethnic group they considered themselves to belong to (black, non-Hispanic; Asian/Pacific Islander; American Indian/Alaskan Native; Hispanic; white, non-Hispanic; or other). The proportion of students falling into the five traditional categories is shown in Exhibit 5-1 (in keeping with how OSPI collects student demographic information, these percentages are based on students who selected a category besides “other”).

Exhibit 5-1. Race/Ethnicity



About 70 to 80 percent of the students at each grade are "White, not Hispanic."

About 70 to 80 percent of the students at each grade are "white, not Hispanic." Five to twelve percent of students are of Hispanic origin. Asian/Pacific Islanders are the next most heavily represented (about 8 percent at each grade level.)

Minority students in the survey are fairly similar to their representation in the student population as a whole.

The percentage of minority students in the survey sample shown in Exhibit 5-1 are fairly similar to their representation in the Washington student population. Minority students are overrepresented by 7.5 percent at sixth grade and 6.2 percent at eighth grade, almost exactly represented at tenth grade, and underrepresented by 4.2 percent at twelfth grade. Considerable research is available that documents different patterns of problem behaviors and risk factors over ethnic groups (Pollard, 1993; Vega, et al., 1993).

Geographic region

For purposes of sampling, Washington was divided into four geographic regions.

For purposes of sampling, Washington was divided into four geographic regions, as displayed in Exhibit 5-2. The eastern region includes 20 counties and approximately 25 percent of the student population in the state. The southwest region includes 11 counties and approximately 18 percent of the student population. The Puget Sound region includes three counties and approximately 42 percent of the student population. The northwest region includes five counties and approximately 17 percent of the student population.

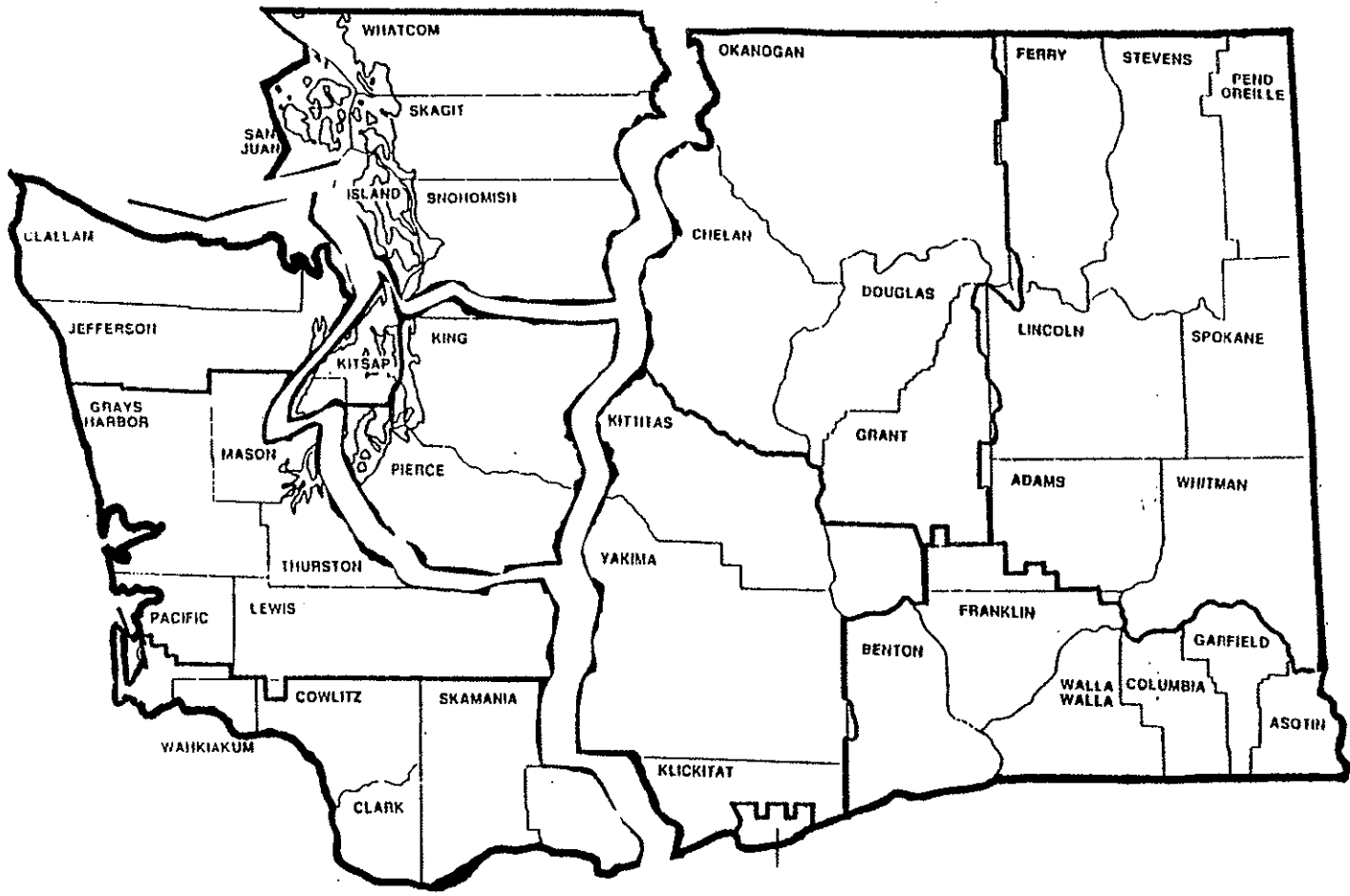


Exhibit 5-2. Geographic Regions

Because of different survey return rates, there was a higher proportion of students in some regions and a lower proportion in other regions that took part in the survey than the sampling plan originally specified. Among sixth grade schools the eastern region was overrepresented and the southwest region was under-represented. Among eighth grade schools the northwest region was underrepresented and the Puget Sound region was overrepresented. Among high schools the east and southwest regions were underrepresented and the Puget Sound and northwest regions were overrepresented (with the exception of tenth grade schools in the Puget Sound region). To achieve a more balanced representation, the responses of students from each region were adjusted through a statistical weighting procedure described in the technical report (Deck et al., 1998). This weighting procedure achieved a proportional representation of students by region within 1 to 2 percent of the population statistics cited above. These proportions are given in Exhibit 5-3.

Exhibit 5-3. Actual and Weighted Proportions of Survey Participants by Geographic Region

Grade	East		Southwest		Puget Sound		Northwest	
	Actual	Weighted	Actual	Weighted	Actual	Weighted	Actual	Weighted
6	31.6	24.5	12.5	21.7	37.4	37.9	18.5	15.8
8	23.2	25.2	22.4	21.5	53.4	37.4	11.0	15.8
10	20.6	24.8	17.0	22.9	37.3	37.7	25.1	14.7
12	16.4	25.2	17.3	22.9	41.4	37.2	24.9	14.7

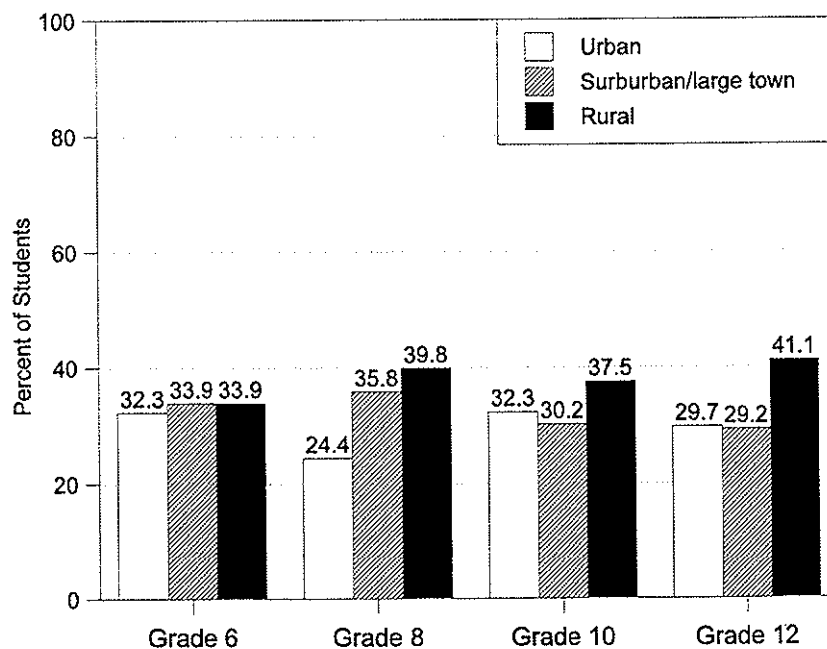
Note: Values shown above are percentages.

Rural/urban

Three categories describing the urbanicity/rurality of the participating schools were used to draw the sample.

Three categories describing the urbanicity/rurality of the participating schools were used to draw the sample. “Urban” schools were located in large urban centers and smaller cities that are urban in nature but with more modest population size. Schools in these cities account for 27 percent of Washington’s student population. “Suburban” schools were located in areas near large cities or were small cities. These areas contain about 36 percent of the state’s student population. “Rural” schools were from identifiable communities away from urban areas with smaller populations than small cities or from areas with low population density. Schools in this category include about 37 percent of the state’s population. Exhibit 5-4 illustrates the percentage of students in the state sample by the rural/urban characteristics of their schools.

Exhibit 5-4. Distribution of Students in the State Sample by Rural/Urban Characteristics of School



Previous state and national surveys suggest little evidence of differences in substance use among young people in these different types of areas other than different prevalence rates related to specific

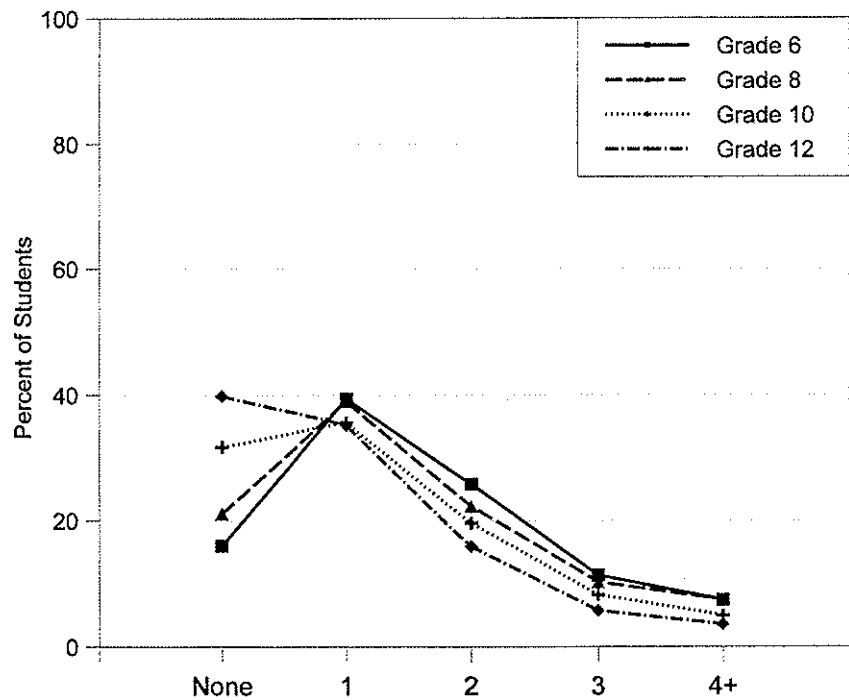
substances (e.g., smokeless tobacco typically has a higher prevalence rate in rural areas). Higher rates of violent behavior and weapon carrying, however, have been reported in large cities in national surveys (e.g., Johnston, O'Malley, and Bachman, 1994b).

***Family
environment: size***

... 48 percent of high school seniors and 27 percent of tenth graders report three or more adults living with them at home.

About two-thirds of the students who participated in the *WSSAHB* come from homes with two adults. This proportion decreased progressively for older students (59 percent among tenth graders, 41 percent for high school seniors). Because the proportion of students from single-adult homes is relatively constant across grades (ranging from 9 to 14 percent), these differences typically reflect more than two adults present in the homes of high school students. In fact, 48 percent of high school seniors and 27 percent of tenth graders reported three or more adults living with them at home. This may be due to the definition of "adult" as persons 18 years old or older and the fact that high school students may be more likely than younger students to have older siblings living with them in their homes.

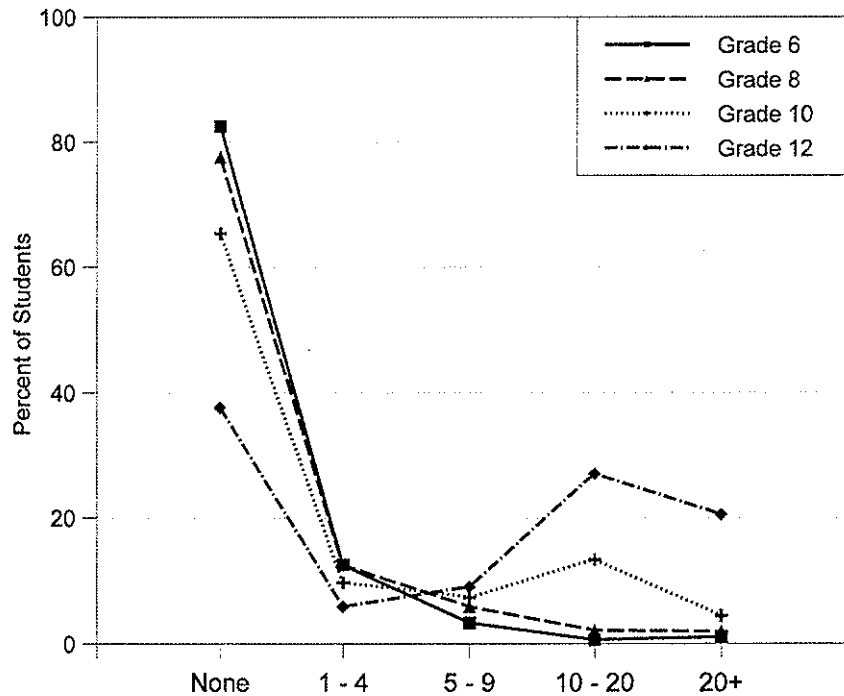
The number of other children living at home is displayed by grade level in Exhibit 5-5. All grades follow a similar pattern, except for the differences in the percentage of students indicating that there are no other children besides themselves at home. The display shows that older students are far more likely to have no siblings living at home (40 percent at twelfth grade versus 16 percent at sixth grade). As with the number of adults at home, this is likely not to be an indicator of family size as much as suggesting that siblings of these older students may not fit the definition of "children" (under 18 years of age).

Exhibit 5-5. Number of Other Children at Home

The influence of siblings and peers on many of the health behaviors under study here is well documented. Like peers, older siblings can be models of prosocial behavior or influence to younger children to engage in risk or problem behaviors.

Working at a part-time job

Having a part-time job can represent important responsibility to a young person. Previous research on alcohol, tobacco, and other drug use indicates that a moderate amount of part-time work is associated with lower ATOD use (Johnston et al., 1994a). Working too many hours, however, is associated with emotional stress and problem behaviors (Resnick et al., 1997). In Exhibit 5-6, the distribution of the number of hours typically worked per week during the school year is displayed for all grades.

Exhibit 5-6. Hours Per Week Worked at a Part-Time Job

Nearly two-thirds of twelfth grade students work at a part-time job, and one out of three of these employed students works 20 or more hours per week.

The percentage of students who work at a part-time job increases as students get older. Less than one out of five sixth grade students work at a part-time job, but nearly two-thirds of twelfth grade students work at a part-time job. Of those twelfth graders who are employed, 43 percent work 10–20 hours per week and 33 percent work over 30 hours per week. Working too many hours at a part-time job or participating in too many school or community activities can have adverse effects on young people. As noted earlier, excessive time spent on these activities is associated with lower academic performance and higher prevalence of various problem behaviors (Johnston et al., 1994a; Resnick, 1997).

Conclusion

The 1998 administration of the Washington State Survey of Adolescent Health Behaviors was the product of a collaborative effort among the Office of Superintendent of Public Instruction; the Department of Social and Health Services; the Department of Community, Trade and Economic Development; and RMC Research Corporation. The survey was the fifth of its kind in the state since 1988 and charted trends in health behaviors and related risk factors over the past ten years.

Students in Washington State continued to be involved in fighting and weapon carrying behaviors. The prevalence of weapon carrying in the past 30 days among sixth grade students continued to decline from 1992 to 1998, but for older students the decline did not continue from 1995 to 1998. Among eighth grade students, one out of eight students reported having ever belonged to a gang. Students also reported having experienced feelings of depression.

Although there was variation among grades, experimentation with alcohol, tobacco, and marijuana has continued to increase. However, experimentation with smokeless tobacco remained unchanged among sixth and twelfth grade students and decreased among eighth and tenth grade students. Current use of alcohol remained unchanged for sixth and eighth grade students but increased for tenth and twelfth grade students. Eighth grade students reported less current use of tobacco, but twelfth grade students reported more current use of tobacco. There was also an increase in the percentage of twelfth grade students who reported current use of marijuana. Binge drinking increased among tenth and twelfth grade students. Among eighth grade students, an unchanged rate of current marijuana use and binge drinking were associated with an increase in the percentage of students who perceived great risk associated with these behaviors.

This report reaffirmed the relationship between ATOD use and risk and protective factors. In particular, community laws and norms favorable toward use, little commitment to school, early initiation of problem behavior, attitudes favorable toward drug use, and friends' use of drugs

were risk factors associated with higher levels of use. Social skills and belief in the moral order were protective factors associated with lower levels of use. The report also reaffirmed the cumulative effect of risk and protective factors: the higher the number of risk factors the greater the likelihood of ATOD use, and the higher the number of protective factors the smaller the likelihood of ATOD use.

The 1998 WSSAHB represents an ongoing effort to assess the health of youth throughout Washington State. The results of the survey will be used by persons at the state, county, district, school, and community levels who are interested in developing or improving prevention and intervention programs designed to better the lives of youth throughout the state.

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Appendix

Item-Level Frequencies

1998 Washington State Survey of
Adolescent Health Behaviors

Grades 6, 8, 10, and 12

16. How many times have you changed homes since kindergarten? (*Community: transitions and mobility*)

	Grade 6	Grade 8	Grade 10	Grade 12
Never	33.1	29.5	24.5	24.2
1 or 2 times	32.8	31.3	31.3	30.8
3 or 4 times	19.1	19.5	20.4	21.7
5 or 6 times	7.8	9.3	10.7	9.7
7 or more times	7.1	10.5	13.1	13.5
N	3,891	4,010	3,956	2,599

17. Have you changed schools in the past year? (*Community: transitions and mobility*)

	Grade 6	Grade 8	Grade 10	Grade 12
No	73.2	82.5	80.8	89.6
Yes	26.8	17.5	19.2	10.4
N	3,731	3,901	3,886	2,567

18. How many times have you changed schools since kindergarten? (*Community: transitions and mobility*)

	Grade 6	Grade 8	Grade 10	Grade 12
Never	32.9	24.9	25.9	24.2
1 or 2 times	38.5	36.4	29.1	29.3
3 or 4 times	18.5	23.3	24.5	26.5
5 or 6 times	6.4	9.2	11.7	11.6
7 or more times	3.7	6.1	8.7	8.5
N	3,898	3,983	3,937	2,593

19. People move in and out of my neighborhood a lot. (*Community: transitions and mobility*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	23.0	20.4	20.9	23.5
no	47.6	52.3	54.1	53.6
yes	23.1	21.4	20.2	19.2
YES!	6.3	5.9	4.8	3.7
N	3,892	4,022	3,943	2,596

20. How wrong would most adults in your neighborhood think it was for kids your age:

a. To use marijuana. (*Community: laws and norms favorable to drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
Very wrong	85.4	69.9	57.4	53.6
Wrong	10.0	19.2	27.5	29.6
A little bit wrong	2.4	8.1	11.5	12.9
Not wrong at all	2.2	2.8	3.6	3.9
N	3,821	3,967	3,938	2,584

b. To drink alcohol. (*Community: laws and norms favorable to drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
Very wrong	71.0	52.7	38.7	29.1
Wrong	19.5	29.4	36.4	38.6
A little bit wrong	7.0	13.8	19.8	25.6
Not wrong at all	2.5	4.2	5.2	6.7
N	3,814	3,960	3,927	2,578

c. To smoke cigarettes. (*Community: laws and norms favorable to drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
Very wrong	66.1	45.2	29.2	18.4
Wrong	20.0	29.1	34.9	32.1
A little bit wrong	9.5	17.1	24.9	33.8
Not wrong at all	4.5	8.7	11.0	15.6
N	3,818	3,960	3,943	2,576

21. About how many adults have you known personally who in the past year have:

a. Used marijuana, crack, cocaine, or other drugs? (*Community: laws and norms favorable to drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
None	66.9	54.1	40.3	36.0
1 adult	15.1	13.9	15.0	11.5
2 adults	7.3	9.5	10.7	12.2
3 or 4 adults	4.7	9.2	12.3	13.4
5 or more adults	6.1	13.3	21.7	27.0
N	3,781	3,961	3,947	2,580

b. Sold or dealt drugs? (*Community: laws and norms favorable to drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
None	83.9	69.2	57.6	51.5
1 adult	8.7	11.4	12.1	12.6
2 adults	3.3	7.0	9.8	11.4
3 or 4 adults	2.0	5.2	7.8	10.3
5 or more adults	2.1	7.1	12.6	14.2
N	3,747	3,957	3,930	2,581

- c. Done other things that could get them in trouble with the police like stealing, selling stolen goods, mugging or assaulting others, etc.? (*Community: laws and norms favorable to drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
None	75.5	66.2	60.8	57.2
1 adult	13.1	12.5	12.3	11.3
2 adults	5.0	6.8	7.9	10.3
3 or 4 adults	3.0	5.3	7.3	7.1
5 or more adults	3.4	9.2	11.7	14.0
N	3,738	3,947	3,931	2,580

- d. Gotten drunk or high? (*Community: laws and norms favorable to drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
None	52.3	35.2	24.5	19.5
1 adult	21.2	18.6	13.8	11.0
2 adults	9.3	10.3	10.1	9.8
3 or 4 adults	6.2	9.8	11.3	10.3
5 or more adults	11.0	26.1	40.3	49.5
N	3,762	3,951	3,931	2,590

22. If a kid drank some beer, wine, or hard liquor (for example, vodka, whiskey, or gin) in your neighborhood would he or she be caught by the police? (*Community: laws and norms favorable to drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	18.8	30.3	40.8	42.8
no	37.1	48.9	47.5	48.5
yes	29.3	15.4	8.9	6.7
YES!	14.7	5.4	2.8	2.0
N	3,771	3,976	3,927	2,583

23. If a kid smoked marijuana in your neighborhood would he or she be caught by the police? (*Community: laws and norms favorable to drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	14.0	26.1	39.0	39.9
no	29.1	44.2	46.6	47.8
yes	33.4	21.1	10.7	9.2
YES!	23.4	8.7	3.7	3.0
N	3,730	3,970	3,922	2,576

24. If a kid carried a handgun in your neighborhood, would he or she be caught by the police?
(Community: laws and norms favorable to drug use)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	10.9	17.9	26.0	25.4
no	21.8	33.2	38.1	40.0
yes	32.0	30.1	23.8	23.2
YES!	35.3	18.8	12.1	11.5
N	3,743	3,951	3,900	2,567

25. If you wanted to get some beer, wine, or hard liquor (for example, vodka, whiskey, or gin), how easy would it be for you to get some? *(Community: perceived availability of drugs and handguns)*

	Grade 6	Grade 8	Grade 10	Grade 12
Very hard	52.1	24.3	9.2	5.7
Sort of hard	20.9	21.9	13.7	9.5
Sort of easy	14.9	25.2	30.2	26.9
Very easy	12.1	28.7	46.9	57.9
N	3,803	3,979	3,946	2,591

26. If you wanted to get some cigarettes, how easy would it be for you to get some? *(Community: perceived availability of drugs and handguns)*

	Grade 6	Grade 8	Grade 10	Grade 12
Very hard	46.9	20.7	8.1	3.0
Sort of hard	18.2	15.8	8.5	2.7
Sort of easy	15.0	20.7	17.4	6.2
Very easy	19.9	42.8	66.0	88.2
N	3,798	3,982	3,939	2,583

27. If you wanted to get some marijuana, how easy would it be for you to get some? *(Community: perceived availability of drugs and handguns)*

	Grade 6	Grade 8	Grade 10	Grade 12
Very hard	77.5	41.4	16.2	9.5
Sort of hard	10.4	17.3	14.9	12.0
Sort of easy	6.7	18.1	24.1	27.3
Very easy	5.5	23.2	44.8	51.3
N	3,774	3,970	3,930	2,575

28. If you wanted to get a drug like cocaine, LSD, or amphetamines, how easy would it be for you to get some? (*Community: perceived availability of drugs and handguns*)

	Grade 6	Grade 8	Grade 10	Grade 12
Very hard	86.3	62.1	38.2	26.7
Sort of hard	7.6	19.5	27.8	31.4
Sort of easy	3.4	11.7	21.5	26.8
Very easy	2.8	6.7	12.5	15.1
	<u>6.2</u>	<u>18.7</u>	<u>34.0</u>	<u>41.9</u>
N	3,753	3,967	3,906	2,561

29. If you wanted to get a handgun, how easy would it be for you to get one? (*Community: perceived availability of drugs and handguns*)

	Grade 6	Grade 8	Grade 10	Grade 12
Very hard	71.9	58.0	44.1	33.8
Sort of hard	13.9	19.7	25.1	28.5
Sort of easy	6.9	10.4	14.9	19.0
Very easy	7.4	11.9	16.0	18.7
N	3,778	3,959	3,904	2,547

30. There are lots of adults in my neighborhood I could talk to about something important. (*Community: opportunities for prosocial involvement*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	10.9	16.4	18.5	20.2
no	17.7	24.7	28.3	30.7
yes	36.8	32.6	32.7	31.2
YES!	34.7	26.3	20.5	17.9
N	3,797	3,933	3,887	2,574

31. Which of the following activities for people your age are available in your community?

a. Sports teams (*Community: opportunities for prosocial involvement*)

	Grade 6	Grade 8	Grade 10	Grade 12
Yes	88.9	88.4	87.9	88.1
No	11.1	11.6	12.1	11.9
N	3,739	3,891	3,845	2,557

b. Scouting (such as Cubs Scouts, Brownies, Boy Scouts, Girl Scouts, Camp Fire Girls, etc.) (*Community: opportunities for prosocial involvement*)

	Grade 6	Grade 8	Grade 10	Grade 12
Yes	76.8	70.7	73.0	78.6
No	23.2	29.3	27.0	21.4
N	3,676	3,837	3,795	2,523

c. Boys and girls clubs. (*Community: opportunities for prosocial involvement*)

	Grade 6	Grade 8	Grade 10	Grade 12
Yes	64.5	62.7	60.5	61.0
No	35.5	37.3	39.5	39.0
N	3,536	3,767	3,732	2,490

d. 4-H clubs. (*Community: opportunities for prosocial involvement*)

	Grade 6	Grade 8	Grade 10	Grade 12
Yes	49.1	51.1	60.0	64.4
No	50.9	48.9	40.0	35.6
N	3,233	3,561	3,683	2,456

e. Service clubs (such as Circle-K, Job's Daughters, Candy Stripers, church youth groups, etc.).
(*Community: opportunities for prosocial involvement*)

	Grade 6	Grade 8	Grade 10	Grade 12
Yes	66.2	70.7	73.2	77.9
No	33.8	29.3	26.8	22.1
N	3,501	3,763	3,790	2,505

32. My neighbors notice when I am doing a good job and let me know. (*Community: rewards for prosocial involvement*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	18.9	26.6	29.4	31.1
no	27.2	31.4	33.4	35.9
yes	33.8	30.5	29.2	24.1
YES!	20.1	11.5	8.1	8.9
N	3,759	3,900	3,826	2,549

33. There are people in my neighborhood who encourage me to do my best. (*Community: rewards for prosocial involvement*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	14.8	23.5	25.8	27.0
no	20.5	25.8	26.8	28.9
yes	35.8	32.2	33.8	31.1
YES!	29.0	18.6	13.6	13.0
N	3,754	3,896	3,827	2,545

34. There are people in my neighborhood who are proud of me when I do something well. (*Community: rewards for prosocial involvement*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	14.9	22.4	24.2	25.4
No	20.3	24.2	25.3	24.6
yes	36.2	34.5	36.6	35.4
YES!	28.6	18.9	13.8	14.7
N	3,739	3,901	3,828	2,543

The next section asks about your experience with tobacco, alcohol, and other drugs. Remember, your answers are anonymous. (35–69)

Have you ever, even once in your lifetime, used any of the following drugs? (35–45)

35. Smoking tobacco (cigarettes, cigars, pipes).

	Grade 6	Grade 8	Grade 10	Grade 12
No	74.3	51.8	36.6	31.6
Yes	25.7	48.2	63.4	68.4
N	3,907	4,039	3,968	2,605

36. Smokeless tobacco (chew, plug, snuff, spit).

	Grade 6	Grade 8	Grade 10	Grade 12
No	92.2	85.2	74.2	65.0
Yes	7.8	14.8	25.8	35.0
N	3,896	4,029	3,961	2,604

37. Alcohol (beer, wine, wine coolers, liquor).

	Grade 6	Grade 8	Grade 10	Grade 12
No	60.2	37.3	20.3	15.8
Yes	39.8	62.7	79.7	84.2
N	3,864	4,023	3,957	2,597

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

	Grade 6	Grade 8	Grade 10	Grade 12
No	93.0	71.8	50.5	44.9
Yes	7.0	28.2	49.5	55.1
N	3,875	4,022	3,951	2,594

39. Cocaine or crack (coke, rock, snow).

	Grade 6	Grade 8	Grade 10	Grade 12
No	97.7	94.8	90.6	90.3
Yes	2.3	5.2	9.4	9.7
N	3,883	4,020	3,938	2,587

40. Inhaled substances to get high (snappers, poppers, rush, other things you sniff to get high).

	Grade 6	Grade 8	Grade 10	Grade 12
No	93.0	85.7	84.7	86.7
Yes	7.0	14.3	15.3	13.3
N	3,885	4,032	3,952	2,596

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

	Grade 6	Grade 8	Grade 10	Grade 12
No	97.4	91.3	81.2	76.2
Yes	2.6	8.7	18.8	23.8
N	3,880	4,033	3,961	2,600

42. [Bogus drug used as check on honesty]

43. Steroids (muscle builders).

	Grade 6	Grade 8	Grade 10	Grade 12
No	97.4	97.4	96.9	97.0
Yes	2.6	2.6	3.1	3.0
N	3,855	4,013	3,949	2,595

44. Heroin.

	Grade 6	Grade 8	Grade 10	Grade 12
No	98.3	97.4	96.1	96.4
Yes	1.7	2.6	3.9	3.6
N	3,873	4,013	3,925	2,593

45. Amphetamines of any kind (speed, uppers, meth, bennies, crank)
(do NOT include nonprescription or over-the-counter drugs or drugs prescribed to you by a doctor).

	Grade 6	Grade 8	Grade 10	Grade 12
No	96.6	91.6	85.4	85.1
Yes	3.4	8.4	14.6	14.9
N	3,833	4,005	3,941	2,589

46. Methamphetamine specifically (meth, crystal meth, ice, crank).

	Grade 6	Grade 8	Grade 10	Grade 12
No	97.7	95.4	90.2	89.0
Yes	2.3	4.6	9.8	11.0
N	3,812	4,001	3,946	2,591

47. During the past 30 days, about how many cigarettes have you smoked?

	Grade 6	Grade 8	Grade 10	Grade 12
I did not smoke	95.3	84.8	78.2	71.4
Up to 5 per day	4.2	11.8	12.7	17.0
About 1 pack per day	.4	1.8	7.0	9.7
More than 1 pack per day	.1	.7	1.2	1.4
About 2 packs per day	.1	.9	.9	.5
N	3,683	3,870	3,862	2,540

During the past 30 days, how many times have you used each of the following drugs? (48–56)

48. Smokeless tobacco (chew, plug, snuff).

	Grade 6	Grade 8	Grade 10	Grade 12
None	96.5	93.3	90.4	87.6
1–2 times	2.4	3.6	4.0	4.0
3–5 times	.3	1.3	1.5	1.8
6–9 times	.3	.4	.7	.6
10 or more times	.5	1.3	3.5	6.0
N	3,892	4,011	3,942	2,588

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

	Grade 6	Grade 8	Grade 10	Grade 12
None	86.2	69.0	55.1	48.0
1–2 times	10.1	18.2	22.6	23.2
3–5 times	2.1	7.0	11.5	12.7
6–9 times	.6	2.5	5.8	7.5
10 or more times	1.0	3.3	5.0	8.4
N	3,877	4,021	3,955	2,597

83.5
16.46
99.96

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

	Grade 6	Grade 8	Grade 10	Grade 12
None	96.6	83.5	73.4	71.3
1-2 times	2.2	6.9	9.2	9.5
3-5 times	.3	3.1	5.4	4.1
6-9 times	.3	2.0	2.7	2.9
10 or more times	.6	4.4	9.3	12.2
N	3,879	4,018	3,955	2,594

51. Cocaine or crack (coke, rock, snow).

	Grade 6	Grade 8	Grade 10	Grade 12
None	98.9	97.5	96.8	97.3
1-2 times	.6	1.4	2.0	1.5
3-5 times	.2	.5	.7	.6
6-9 times	.1	.3	.2	.1
10 or more times	.2	.3	.3	.5
N	3,878	4,014	3,949	2,594

52. Inhalants (things you sniff to get high).

	Grade 6	Grade 8	Grade 10	Grade 12
None	96.8	93.4	96.1	97.7
1-2 times	2.2	4.0	2.4	1.3
3-5 times	.4	1.4	.6	.6
6-9 times	.2	.5	.4	.1
10 or more times	.4	.7	.5	.3
N	3,865	4,020	3,947	2,601

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

	Grade 6	Grade 8	Grade 10	Grade 12
None	98.7	96.2	94.2	94.0
1-2 times	.8	2.5	3.8	4.6
3-5 times	.2	.6	1.0	.8
6-9 times	.1	.3	.4	.2
10 or more times	.2	.4	.6	.5
N	3,870	4,013	3,949	2,602

54. [Bogus drug used as check on honesty]

55. Heroin.

	Grade 6	Grade 8	Grade 10	Grade 12
None	99.4	98.7	98.7	99.3
1-2 times	.3	.7	.8	.1
3-5 times	.1	.2	.1	.2
6-9 times	.1	.2	.2	.3
10 or more times	.2	.2	.2	.2
N	3,849	3,999	3,944	2,594

56. Amphetamines of any kind (speed, uppers, meth, bennies, crank)
(do NOT include nonprescription or over-the-counter drugs or drugs prescribed to you by a doctor).

	Grade 6	Grade 8	Grade 10	Grade 12
None	98.6	96.1	94.4	96.4
1-2 times	1.0	2.1	3.0	2.2
3-5 times	.1	.7	1.1	.9
6-9 times	.1	.6	.8	.2
10 or more times	.2	.4	.7	.3
N	3,843	3,991	3,949	2,602

57. Methamphetamine specifically (meth, crystal meth, ice, crank).

	Grade 6	Grade 8	Grade 10	Grade 12
None	99.1	97.7	96.2	97.1
1-2 times	.5	1.3	2.1	1.8
3-5 times	.2	.4	.7	.4
6-9 times	.1	.2	.4	.3
10 or more times	.2	.4	.6	.3
N	3,842	3,997	3,950	2,603

58. 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
None	92.4	81.7	72.3	67.3
Once	3.8	6.5	9.9	11.5
Twice	1.7	4.9	7.5	7.2
3 to 5 times	1.3	4.1	6.4	8.5
6 or more times	.8	2.9	3.9	5.5
N	3,799	3,970	3,934	2,583

59. If you drink alcohol, how do you usually get the beer, wine, or liquor you drink?

	Grade 6	Grade 8	Grade 10	Grade 12
I don't drink alcohol	81.6	59.7	42.1	31.3
From home and my parents know	9.4	8.9	8.0	8.9
From home but parents don't know	3.3	7.7	4.5	2.2
From friends	4.9	19.5	36.9	45.3
Ask adults to purchase or buy it myself	.8	4.1	8.6	12.2
N	3,812	3,836	3,730	2,492

60. If you smoke, how do you usually get the cigarettes?

	Grade 6	Grade 8	Grade 10	Grade 12
I don't smoke	86.3	70.4	67.4	59.0
From adults	2.5	6.0	6.6	1.8
From friends	10.3	20.5	19.6	8.4
From a vending machine	.2	.3	.2	.2
From a store	.7	2.8	6.1	30.7
N	3,798	3,891	3,803	2,535

How much do you think people risk harming themselves if they: (61–66)

61. Smoke one or more packs of cigarettes per day? (*Peer-Individual: perceived risks of drug use*)

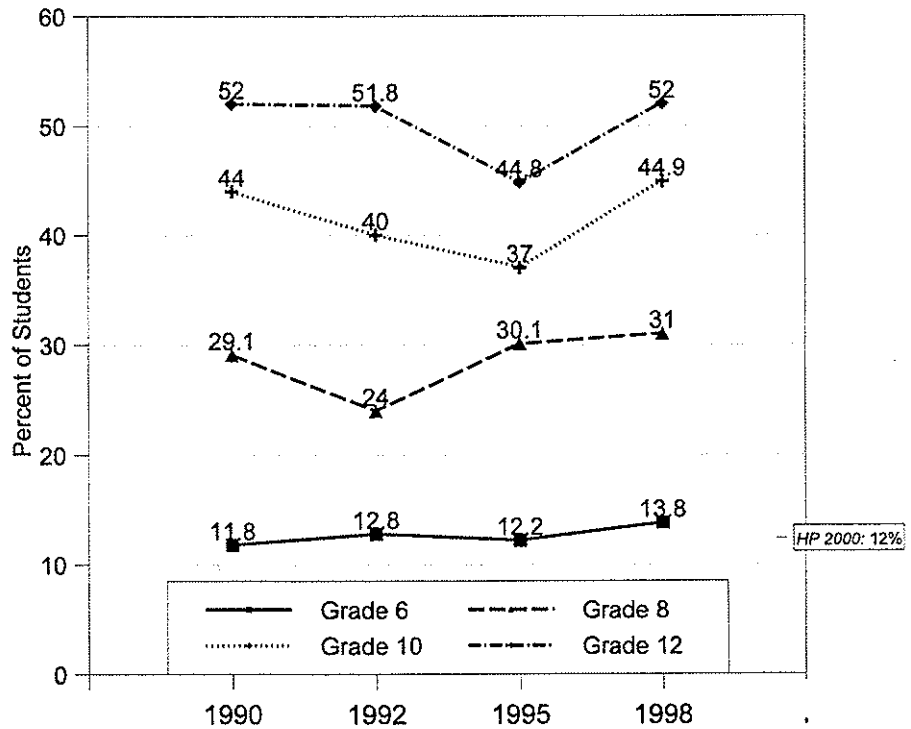
	Grade 6	Grade 8	Grade 10	Grade 12
No risk	5.8	4.0	2.6	1.9
Slight risk	9.9	8.6	7.4	5.3
Moderate risk	26.4	30.7	29.2	25.1
Great risk	42.6	47.8	56.3	64.6
Not sure	15.4	8.9	4.5	3.1
N	3,826	3,984	3,938	2,578

of all high school seniors. Exhibit 3-6 shows the trend over time in 30-day use of alcohol. As may be seen, the percentage of tenth and twelfth grade students who reported regular use of alcohol increased from 1995 to 1998, while the percentage of sixth and eighth grade students remained unchanged.

◆ Finding ◆

The percentage of tenth and twelfth grade students who reported regular use of alcohol increased from 1995 to 1998, while the percentage of sixth and eighth grade students remained unchanged.

Exhibit 3-6. 30-Day Alcohol Use



All of these rates are well above the national health objective in Healthy People 2000:



Reduce the proportion of young people who have used alcohol to 12.6 percent, marijuana to 3.2 percent, and cocaine to 0.6 percent in the past month.

From Grade 8 onward, more than half of the students who had ever tried alcohol were current drinkers. Binge drinking—having five or more drinks at a single setting—was reported by 7.6 percent of the sixth graders and more than nearly one-third of the high school seniors (32.7 percent). Among high school students, nearly two-thirds (62.8 percent) of those who are current drinkers (i.e., used alcohol in the past 30 days) had engaged in binge drinking in the past two weeks. Although any amount of alcohol use is dangerous and illegal for young people, the prevalence of binge drinking is of special concern because of the serious health risks involved with this behavior.

... the declines in this key indicator realized through 1992 reversed themselves in 1995 at Grades 8 and 10 and increased at all grade levels in 1998.

Over time, the trends in the prevalence of binge drinking among Washington's students have fluctuated. As shown in Exhibit 3-7, the declines in this key indicator realized through 1992 reversed themselves in 1995 at Grades 8 and 10. The prevalence of binge drinking increased at all grade levels in 1998 and is now 3 to 5 percentage points higher than it was in 1992. In particular, the prevalence of binge drinking among sixth grade students steadily increased from 1992 to 1998 (from 4.0 to 7.6 percent—a near doubling).

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These questions ask for some general information about the people completing the survey. Please mark the response that best describes you. (1–9)

1. How old are you?

	Grade 6	Grade 8	Grade 10	Grade 12
10 or younger	.1			
11	33.1			
12	63.2	.1		
13	3.5	29.9		
14	.1	63.7	.1	
15		6.0	25.8	
16		.1	66.0	.5
17			7.4	28.0
18			.6	62.9
19 or older			.1	8.6
N	3,928	4,048	3,981	2,607

[Item 2 was a check on students' grade level.]

3. Are you:

	Grade 6	Grade 8	Grade 10	Grade 12
Female	50.2	51.4	51.2	50.8
Male	49.8	48.6	48.8	49.2
N	3,834	3,911	3,936	2,565

[Item 4 asked for students' zip code.]

5. How many adults 18 years old or older live in your home?

	Grade 6	Grade 8	Grade 10	Grade 12
none	3.6	2.4	1.5	2.1
1	12.4	13.9	13.0	8.5
2	65.6	62.4	58.8	41.2
3	11.7	15.3	20.3	35.4
4 or more	6.7	5.9	6.4	12.7
N	3,901	4,024	3,955	2,589

6. Not counting you, how many other children under age 18 live in your home?

	Grade 6	Grade 8	Grade 10	Grade 12
None	16.0	21.1	31.7	39.8
1	39.4	39.0	35.6	35.2
2	25.8	22.3	19.6	15.9
3	11.3	10.2	8.2	5.7
4 or more	7.4	7.4	4.9	3.5
N	3,915	4,036	3,974	2,605

7. What race do you consider yourself to be? (Choose one best answer.)

	Grade 6	Grade 8	Grade 10	Grade 12
Black or African American, not of Hispanic origin	4.6	3.7	3.8	3.2
Asian or Pacific Islander	6.9	6.9	7.3	7.1
American Indian or Alaskan Native	5.6	4.4	2.4	1.6
Hispanic	8.8	11.4	7.7	4.6
White, not of Hispanic origin	57.0	64.8	70.6	76.8
Other	17.1	8.7	8.2	6.8
N	3,730	3,951	3,898	2,576

8. Which of the following adults are living with you now? (Choose all that apply.)

	Grade 6	Grade 8	Grade 10	Grade 12
Mother	92.1	89.2	88.0	85.9
Stepmother	4.0	4.6	5.5	4.7
Foster mother	.4	.4	.5	.4
Grandmother	5.5	4.8	3.9	2.7
Aunt	2.7	2.5	1.9	2.1
Father	68.7	67.6	66.6	65.8
Stepfather	13.0	13.4	14.5	12.1
Foster father	.4	.3	.4	.4
Grandfather	2.7	2.2	1.8	1.5
Uncle	3.0	2.8	2.5	2.3
Other adults	8.1	10.1	12.2	13.1
None of the above	.8	.7	.8	1.4
N	3,905	4,042	3,968	2,606

9. During the school year, how many hours a week do you work at a part-time job?

	Grade 6	Grade 8	Grade 10	Grade 12
I don't work	82.5	77.6	65.3	37.6
1 to 4 hours	12.5	12.5	9.7	5.9
5 to 9 hours	3.3	5.9	7.3	9.0
10 to 20 hours	.6	2.1	13.3	27.0
over 20 hours	1.1	1.9	4.4	20.5
N	3,831	4,007	3,958	2,594

**These statements are about the neighborhood and community where you live.
(10–34)**

10. I like my neighborhood. (*Community: low neighborhood attachment*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	4.7	5.9	5.9	3.8
no	8.4	11.1	11.9	10.4
yes	53.9	54.0	55.2	55.1
YES!	33.1	28.9	27.0	30.6
N	3,903	4,028	3,970	2,604

11. If I had to move, I would miss the neighborhood I now live in. (*Community: low neighborhood attachment*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	9.7	11.9	12.9	11.4
no	18.7	24.0	27.8	32.7
yes	37.0	37.1	37.6	36.1
YES!	34.6	26.9	21.7	19.8
N	3,882	4,003	3,964	2,595

12. I'd like to get out of my neighborhood. (*Community: low neighborhood attachment*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	41.1	31.4	28.3	21.9
no	37.6	41.5	42.0	43.0
yes	12.7	16.8	18.8	23.5
YES!	8.6	10.3	10.9	11.6
N	3,743	3,936	3,870	2,535

13. How much do each of the following statements describe your neighborhood?

a. Crime and/or drug selling. (*Community: community disorganization*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	71.2	58.0	53.4	51.2
no	16.7	22.8	25.2	27.4
yes	9.1	13.6	15.1	16.3
YES!	3.0	5.6	6.3	5.0
N	3,666	3,861	3,895	2,543

b. Fights. (*Community: community disorganization*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	55.1	53.9	55.5	56.6
no	25.4	26.8	28.4	30.2
yes	14.4	13.9	11.9	10.5
YES!	5.1	5.4	4.1	2.7
N	3,653	3,823	3,881	2,517

c. Lots of empty or abandoned buildings. (*Community: community disorganization*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	77.6	74.4	73.6	73.4
no	18.0	19.8	21.3	22.7
yes	3.3	4.1	3.8	2.8
YES!	1.2	1.8	1.3	1.1
N	3,640	3,845	3,874	2,531

d. Lots of graffiti. (*Community: community disorganization*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	72.6	68.8	72.9	75.1
no	18.2	20.6	20.7	20.4
yes	6.0	7.1	4.4	3.1
YES!	3.3	3.5	2.0	1.4
N	3,608	3,836	3,879	2,530

14. I feel safe in my neighborhood. (*Community: community disorganization*)

	Grade 6	Grade 8	Grade 10	Grade 12
NO!	3.1	2.5	1.8	1.3
no	7.4	6.9	4.1	3.7
yes	39.9	41.4	41.1	38.5
YES!	49.6	49.1	53.0	56.5
N	3,900	4,017	3,964	2,607

15. Have you changed homes in the past year (the last 12 months)? (*Community: transitions and mobility*)

	Grade 6	Grade 8	Grade 10	Grade 12
No	76.8	77.8	79.7	82.2
Yes	23.2	22.2	20.3	17.8
N	3,888	4,019	3,960	2,601

62. Try marijuana once or twice? (*Peer-Individual: perceived risks of drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
No risk	11.0	20.6	35.4	43.4
Slight risk	22.2	31.7	33.8	30.8
Moderate risk	24.2	21.5	15.2	12.0
Great risk	28.5	18.8	11.8	10.1
Not sure	14.1	7.4	3.7	3.7
N	3,790	3,973	3,920	2,573

63. Smoke marijuana occasionally? (*Peer-Individual: perceived risks of drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
No risk	7.4	9.1	13.1	16.8
Slight risk	9.1	16.5	24.3	29.2
Moderate risk	25.2	30.6	34.6	30.6
Great risk	44.9	35.7	24.1	20.2
Not sure	13.4	8.1	3.8	3.2
N	3,774	3,963	3,894	2,571

64. Try cocaine once or twice?

	Grade 6	Grade 8	Grade 10	Grade 12
No risk	7.7	5.7	4.4	4.4
Slight risk	18.1	18.4	16.7	14.7
Moderate risk	26.5	27.0	25.6	23.6
Great risk	32.2	37.7	46.4	52.0
Not sure	15.5	11.1	6.9	5.4
N	3,772	3,949	3,893	2,560

65. Take one or two drinks of an alcoholic beverage (beer, wine, liquor) nearly everyday?
(*Peer-Individual: perceived risks of drug use*)

	Grade 6	Grade 8	Grade 10	Grade 12
No risk	14.9	18.4	18.1	17.9
Slight risk	23.5	25.3	23.8	24.1
Moderate risk	22.5	25.9	29.9	29.6
Great risk	27.3	22.8	24.7	25.3
Not sure	11.7	7.7	3.5	3.0
N	3,803	3,976	3,930	2,577

66. Have five or more drinks once or twice each weekend?

	Grade 6	Grade 8	Grade 10	Grade 12
No risk	9.0	9.5	7.9	8.3
Slight risk	13.8	14.6	16.7	17.6
Moderate risk	25.0	28.1	32.8	32.0
Great risk	37.2	38.1	38.3	38.6
Not sure	15.0	9.8	4.3	3.6
N	3,781	3,971	3,926	2,578

How do you think your close friends feel (or would feel) about you doing each of the following things? (67–69)

67. Having five or more drinks once or twice each weekend?

	Grade 6	Grade 8	Grade 10	Grade 12
They approve	5.9	10.0	15.9	18.0
They don't care	15.8	31.1	36.0	39.6
They disapprove	21.3	22.2	21.6	20.7
They strongly disapprove	57.0	36.7	26.5	21.6
N	3,710	3,932	3,927	2,570

68. Smoking marijuana occasionally?

	Grade 6	Grade 8	Grade 10	Grade 12
They approve	5.8	12.9	19.9	19.6
They don't care	9.4	24.0	29.7	32.0
They disapprove	14.6	18.1	19.4	18.5
They strongly disapprove	70.3	45.0	31.1	29.9
N	3,709	3,919	3,926	2,572

69. Trying cocaine once or twice?

	Grade 6	Grade 8	Grade 10	Grade 12
They approve	4.9	4.5	3.6	2.0
They don't care	8.6	14.5	10.5	7.7
They disapprove	16.9	20.8	19.7	20.7
They strongly disapprove	69.5	60.2	66.2	69.6
N	3,711	3,923	3,906	2,573