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## TECHNICAL REPORT

# Washington State Survey of Adolescent Health Behaviors

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## Acknowledgments

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 1995 Washington State Survey of Adolescent Health Behaviors itself, have been the product of a great deal of collaborative effort between the authors, the State Survey Policy Committee, and local educators and health professionals throughout the state of Washington.

The planning of the survey effort through the survey policy committee ultimately included over 20 professionals from various agencies and disciplines across the state. However, the following state staff were most consistently involved.

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Also assisting this group were Michael Arthur and Jack Pollard from the University of Washington's Social Development Research Group and Gregory Weeks from the Washington State Institute for Public Policy at The Evergreen State College. Although all of these experts were very active and extremely influential in the methods and procedures that were used in the survey effort, the authors bear full responsibility for the content of this and companion reports.

We must also thank the school administrators, parents, and local prevention and health professionals who encouraged and supported their schools' participation in the survey. Without these individuals showing responsible concern and interest in addressing the key health behaviors and risk and protective factors at issue in this survey, this major effort would be of little use or consequence.

Finally, with our own staff here at RMC Research Corporation, we are particularly indebted to Tara Vogel, who not only produced this report through her exceptional word processing, formatting and graphics skills, but who also maintained the arduous recordkeeping through the many contacts with local school and health staff during the many months of school recruitment.





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## Chapter 1: The Design and Planning Process

The 1995 Washington State Survey of Adolescent Health Behaviors (WSSAHB) was the fourth biennial survey conducted at Grades 6, 8, 10, and 12 throughout the state of Washington. In this chapter, the authors describe the goals and objectives of the survey, the history of this survey effort since 1988, the collaborative process involving several state agency and university staff during instrument development and throughout the implementation of the project and, finally, the information needs of the state and localities in Washington that the results are designed to meet.

### Goals and Objectives of the Survey

The basic goals and objectives of the WSSAHB were to conduct a Washington State survey of public school adolescent health behavior in order to:

- ♦ Obtain empirical needs assessment data necessary for program planning.
- ♦ Assess the status of priority adolescent health behaviors.
- ♦ Continue the study of trends over time of student alcohol, tobacco and other drug use and abuse and other adolescent health behavior topics.
- ♦ Comprehensively assess risk and protective factors related to poor school performance, substance abuse, violent or suicidal behavior, and sexual activity.
- ♦ Collaborate with the policy committee in the development and enhancement of the survey instrument.

### History of Washington's State Survey Efforts

The 1995 Washington State Survey of Adolescent Health Behaviors (WSSAHB) was the fourth in a series of biennial surveys of health risk behaviors among Washington's students conducted since 1988. In 1992, the state survey effort took on new content from its predecessors (e.g., Deck and Nickel, 1989; Gabriel, 1991) by incorporating a broader spectrum of health risk behaviors. While the 1988 and 1990 surveys focused on alcohol, tobacco and other drug (ATOD) use and attendant risk factors, the 1992 survey added such health risk behaviors as interpersonal violence and weapon carrying, suicide ideation, sexual activity, physical exercise and nutrition, and access to health care (Einspruch and Pollard, 1993). Survey items covering these additional areas were taken primarily from the national survey sponsored by the federal Centers for Disease Control and Prevention (CDC), and the

*Youth Risk Behavior Survey (YRBS)*. The length of the survey grew from 77 items in the 1990 survey to 120 items in 1992. As usual, a shorter version was developed for sixth graders.

The added content in the 1992 survey was the result of a state-level policy decision at the Office of Superintendent of Public Instruction (OSPI) to consolidate two surveys—the *Student Alcohol and Drug Use Survey* and the *Youth Risk Behavior Survey*, already administered in alternate years by separate offices within OSPI. Because of the additional programmatic implications pertaining to a broader range of adolescent health behaviors represented in the *YRBS*, personnel from the state Department of Health (DOH) joined the planning team for the 1992 survey effort.

In the current 1994–95 survey, the content was further expanded to include more comprehensive coverage of risk and protective factors using instrumentation developed by the University of Washington's Social Development Research Group (SDRG). Based on the highly regarded and widely implemented work of the SDRG team (e.g., Hawkins, Catalano and Miller, 1992), a comprehensive self-report instrument had been developed, and the state of Washington had agreed to participate in a federally funded six-state consortium that would use this tool as part of a standardized and comprehensive needs assessment plan. The state's Division of Alcohol and Substance Abuse (DASA) of the Department of Social and Health Services (DSHS) served as the liaison for the SDRG assessment and joined the planning team for the WSSAHB on this basis.

## **The Collaboration Team**

The development and implementation of the 1995 Washington State Survey of Adolescent Health Behaviors was truly a collaborative effort. Through the planning stages of instrument development and sampling design, the following agencies composed the state's survey policy committee, working closely with RMC Research Corporation:

- ◆ Office of Superintendent of Public Instruction.
- ◆ Department of Health.
- ◆ Department of Social and Health Services, Division of Alcohol and Substance Abuse.
- ◆ University of Washington Social Development Research Group.

These agencies, often represented by two or more staff, took part in 12 meetings over a five-month period of development. Special consultants were brought in when key issues pertaining to specific survey content arose or when technicalities around the sampling plan or data analysis were under

discussion. Two staff members from the Washington State Institute for Public Policy at The Evergreen State College, who were charged with the statewide evaluation of the Violence Reduction Programs Act (ESHB 2319), also participated in the early meetings. In all, over 20 professional staff from these state agencies contributed to these discussions.

## Survey Development Process

The role of the survey policy committee was initially an advisory one, pertaining to important content coverage issues and technical issues arising in areas such as sampling design and data analysis. However, because of the ever-widening variety of information needs this survey could address and the consequent demands for expanding the content of the survey, the survey policy committee took on more the role of a work group. In the instrument refinement process, for example, content teams were established to finalize item selection in the following areas of the survey:

- ♦ Demographic and background characteristics of the students.
- ♦ Prevention activities, both in and out of school, participated in by the students.
- ♦ Risk and protective factors.
- ♦ Alcohol, tobacco, and other drug (ATOD) use.
- ♦ Injury behaviors, both intentional and non-intentional.
- ♦ Nutrition and physical activity.
- ♦ Sexual behavior and HIV/AIDS awareness.

Very few new items were written through this process. Rather, items were selected and occasionally refined from standardized, validated surveys such as the National Institute on Drug Abuse (NIDA)-sponsored *Monitoring the Future* survey, the CDC-sponsored *Youth Risk Behavior Survey*, the *DASA Adolescent Household Survey*, the SDRG Risk and Protective Factor Assessment tool, and other items appearing on previous WSSAHB instruments.

Through a series of nine meetings, the survey content was finalized. Due to the enormous information demands (and the consequently large number of items needed), two alternative forms of the survey, consisting of 154 and 182 items, were designed for students in Grades 8, 10 and 12. Shorter versions for Grade 6, consisting of 117 and 136 items, were also established. Three open-ended questions concluded the surveys for students in Grades 8, 10 and 12. These were:

- ♦ What other questions about health-related behaviors should we have asked?

- ◆ How should we use the information we get?
- ◆ Did any of the questions on this survey make you uncomfortable or bother you? If so, give us some examples.

### **Information Needs Met by the Survey**

Within the initial goals and objectives of the survey and through the collaborative planning process, it became apparent that the results of this survey could address a wider variety of information and assessment needs than initially intended. For example:

- ◆ Progress of drug education programs funded under the federal Drug-Free Schools and Communities Act and the state Omnibus Prevention Act.
- ◆ Needs for prevention and treatment planning through prevalence estimates on key target populations and geographic areas within the state.
- ◆ Progress in the state's attainment of the national public health objectives contained in *Healthy People 2000* (Public Health Service, 1990).
- ◆ Progress on a variety of CDC-funded health initiatives and programs such as the tobacco prevention program and the injury prevention program.
- ◆ Status and progress indicators for programs implemented pursuant to the state's recent Violence Reduction Programs Act (ESHB 2319).
- ◆ Data for the comprehensive, cross-agency database on youth violence under development at the Division of Alcohol and Substance Abuse.

### **HRRB Clearance**

The survey, its four forms, and the accompanying administration instructions and supporting materials (detailed in a later chapter of this report) were submitted to the Human Research Review Board (HRRB) clearance process of Washington's Department of Social and Health Services and Department of Health. Initial approval was conditional, pending minor changes to the supporting materials. Final approval was granted when these changes were made. Copies of the correspondence from HRRB are included as Appendix A of this report.

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## Chapter 2: Sampling Design

The objectives for the sampling design for the 1995 WSSAHB were to provide precise estimates of health risk behaviors and attendant risk and protective factors at both statewide and regional levels for all four grade levels included in the survey. Specific interests were also stated for ethnic minorities and youth attending alternative schools throughout the state. To meet these latter interests, oversampling was encouraged.

The sample for the WSSAHB was selected using a stratified, cluster sampling procedure with replacement. Schools were the primary sampling unit (PSU). This procedure was generally consistent with that of previous state surveys, with some refinement to the sampling strata and the selection probabilities as described later in this chapter.

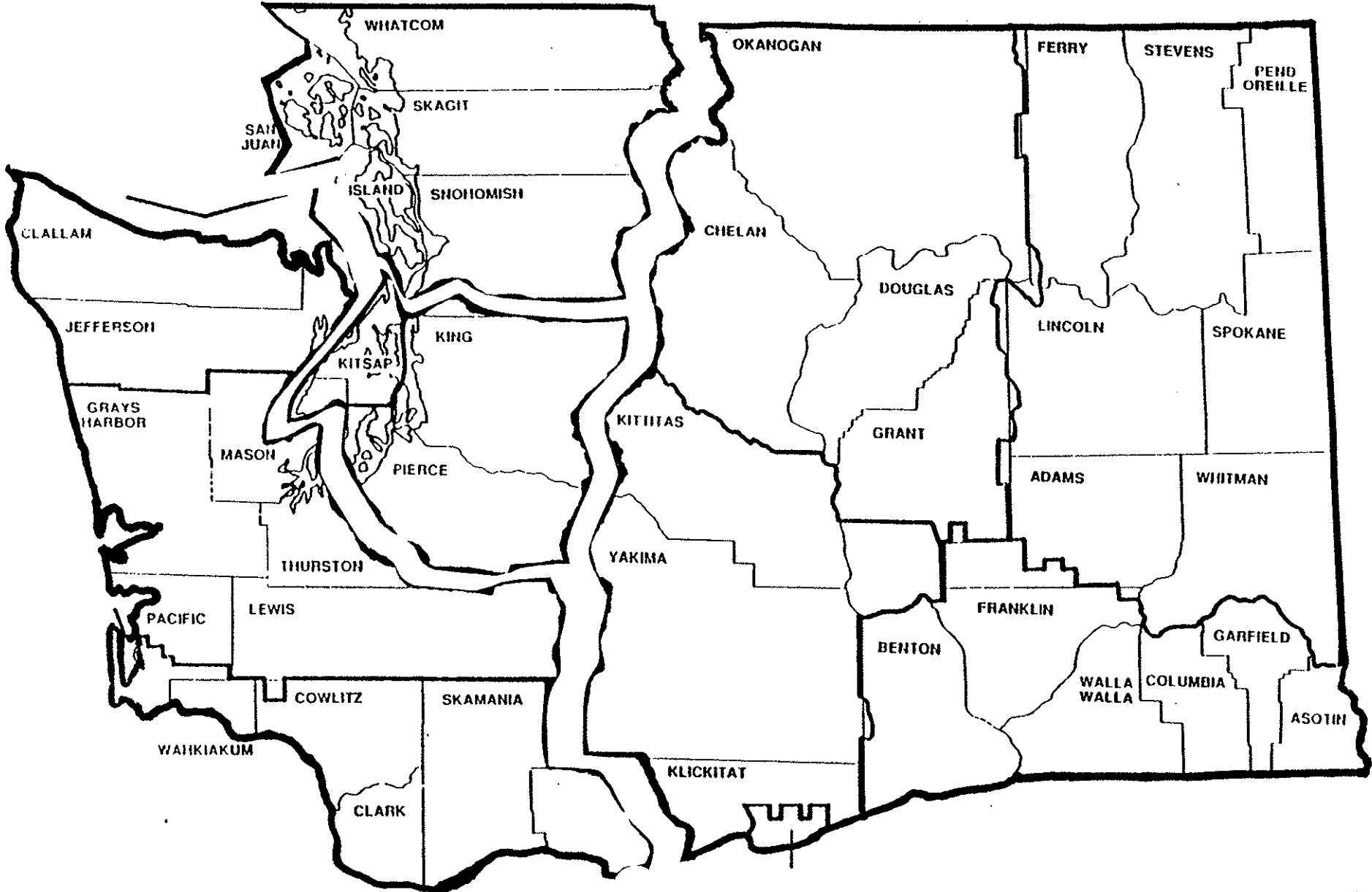
### Sampling Design Strata

After much discussion with the survey policy committee and consultation with experts from the Office of Research and Data Analysis, Department of Social and Health Services, the sampling design was finalized. The sampling plan consisted of two primary strata for each grade level: geographic region and school size. Within the sampling design, two other factors were employed as checks on representativeness and/or selection probabilities: the urbanicity/rurality of the school district and the racial/ethnic distribution. All of these factors are discussed in greater detail below.

### Geographic Region

As shown in Exhibit 2-1, the state of Washington was divided into four geographic regions. The highly rural eastern region consisted of 20 counties and included approximately 25 percent of the student population in the state. The southwest consisted of 12 counties and approximately 20 percent of the student population. The heavily populated Puget Sound region consisted of three counties and approximately 38 percent of the student population. The northwest region consisted of five counties and approximately 17 percent of the state's student population.

Exhibit 2-1



## School Size

Within cells of the sampling design, schools were designated as "large" or "small," depending on their enrollment relative to the statewide average for that grade level. This stratum was included primarily for its advantage to the sampling error calculation in the cluster sampling procedure employed in this study. Further details of its influence are discussed later in this chapter.

A depiction of the stratified sampling design used in the WSSAHB at each of the four grade levels is shown in Exhibit 2-2.

**Exhibit 2-2**  
**Sampling Design**

Geographic Region	School Size	Grade 6	Grade 8	Grade 10	Grade 12
Eastern	Large				
	Small				
Southwest	Large				
	Small				
Puget Sound	Large				
	Small				
Northwest	Large				
	Small				

## Urbanicity

Four levels of rurality/urbanicity were used in the replacement procedure accompanying the sampling design. (For more information see later discussion on sampling procedure.)

Large, urban centers were termed metropolitan core which, although including only four major cities in Washington, accounted for about 18 percent of the student population. Smaller cities, still urban in nature but with more modest population size, were termed non-metropolitan urban. Schools in these locales included about 40 percent of the state's student population. Suburban areas were those near large cities, but with higher socioeconomic characteristics than their urban neighbors. These areas include about 25 percent of the state's student population. Finally, the rural areas were those with low population density, including a large number of schools, but only about 17 percent of the student population.

## Racial/Ethnic Minority Representation

Washington, like many of the states in the Pacific Northwest, is made up of primarily white or Caucasian students. Among high school seniors, for example, student enrollment is approximately 82 percent white, 7 percent Asian, 5 percent Hispanic, 4 percent African American, and 2 percent American Indian. Furthermore, members of racial/ethnic minorities are often concentrated in particular regions of the state, as shown in Exhibit 2-3. For example, more than half of the Hispanic students live within the eastern region of the sampling design described above (and most of these within one or two counties). Similarly, two-thirds of the state's Asian high school seniors and three-fourths of the African-American high school seniors live in the Puget Sound region. Clearly, a simple random sampling procedure within each of the geographic regions would not yield sufficient sample sizes for these students.

**Exhibit 2-3**  
**Racial/Ethnic Distribution of Students by Geographic Region (Grade 12)**

Region	White	Asian	Hispanic	African American	American Indian	Total
Eastern	11,990	306	1,713	204	441	5,856
Southwest	11,684	616	345	230	361	8,802
Puget Sound	17,039	2,644	726	1,600	356	22,365
Northwest	7,420	408	305	122	191	8,446
<i>Total</i>	<i>48,133</i>	<i>3,974</i>	<i>3,089</i>	<i>2,156</i>	<i>1,349</i>	<i>58,701</i>

The interest in sufficient representation of ethnic minorities to permit precise estimates of health risk behaviors for these groups was addressed through the sampling procedure rather than the design. To use ethnic group enrollment as a sampling factor was unworkable because it would essentially add five sampling strata (one for each race/ethnicity) to an already complex design. A compromise approach, using total minority enrollment as a single stratifying factor was also rejected because concentrations of the four racial/ethnic minorities are typically found in different schools across the state. For example, a high racial/ethnic minority enrollment in Yakima County could consist almost entirely of Hispanic students while a high minority enrollment in King County would more likely reflect African-American or Asian students.

To boost the representation of racial/ethnic minorities in the state sample, a sampling with probability proportionate to size (PPS) procedure was used. Under a simple random sample, the probability that any school would be chosen for the sample within a cell of the sampling design shown in Exhibit 2-2 is



1/N (where N is the number of schools in that cell), but under PPS, the probability is a value weighted by its minority enrollment, i.e., larger when the school had a high minority enrollment and smaller when it had a low minority enrollment. This over-representation of minority youth in the statewide sample allows for sufficient precision in estimating prevalence rates for these groups, while state and regional estimates are reconciled by a weighting process that restores these groups to their actual representation in the student population.

## Sampling Procedure: Replacement Schools

Prior experience with surveys of this nature clearly indicate that all schools are not willing to participate. Issues of intrusive content of this particular survey and the amount of school time any survey takes away from learning are reasons often cited for local schools or districts refusing to participate.

In order to ensure sufficient sample size at each grade, a pool of "replacement schools" was selected as part of the sampling process. These schools were selected using the same procedures and design described above. However, these schools were held in reserve pending initial schools' decisions as whether to participate. When a given school selected for the initial sample refused to participate, another school from that region with the same school size, urbanicity, and minority enrollment was added to take its place. This is a procedure frequently used by standardized achievement test publishers in their test norming process. Details as to the number of schools asked to participate, their acceptance rate, and number of replacement schools invoked are given in Chapter 4 of this technical report.

The replacement school procedure selected is one often used in large-scale national surveys, such as the *Monitoring the Future Survey* conducted by Johnston, O'Malley, and Bachman (1993). In considering the use of replacements schools for that survey, the authors note:

*The selection of replacement schools almost entirely removes problems of bias in region, urbanicity, and the like, that might result from certain schools refusing to participate. Other potential biases could be more subtle, however. If, for example, it turned out that most schools with "drug problems" refused to participate, that would seriously bias the sample. And if any other single factor were dominant in most refusals, that also might suggest a source of serious bias. In fact, however, the reasons for a school refusing to participate are varied and are often a function of happenstance events specific to that particular year; only a very small proportion specifically object to the drug content of the survey. Thus we feel quite confident that school refusals have not seriously biased the surveys (pp. 30-31).*

## The Selected Sample

The target sample, employing the design and procedure described above, consisted of nearly 30,000 students and 150 schools. Its distribution across regions and grade levels is shown in Exhibit 2-4. This sample was selected to meet all of the requirements of the state survey policy committee and is much larger in size (larger both in comparison to previous state surveys and in terms of what is needed for precision of the estimates) due to the need to oversample racial/ethnic minorities. It is presented here because it serves as the target against which the obtained sample is compared.

**Exhibit 2-4**  
**Number of Schools and Students by Region and Grade in the Target Sample**

Region	Grade 6		Grade 8		Grade 10		Grade 12		Total	
	Schools	Students	Schools	Students	Schools	Students	Schools	Students	Schools	Students
Eastern	17	1,984	14	2,070	14	2,216	14	1,821	45	8,071
South-west	14	1,465	10	1,698	10	1,307	10	1,307	34	6,149
Puget Sound	23	2,756	12	2,846	12	2,273	12	2,273	47	10,973
North-west	9	1,040	5	1,009	5	723	5	723	19	3,840
<b>Total</b>	63	7,225	41	7,769	41	6,124	41	6,124	145	29,033

## Precision of Survey Estimates

There are two paramount concerns in the methodology of survey research: achieving a scientifically representative sample and obtaining sufficiently precise estimates of the constructs being assessed, in this case, student attitudes, values, and behaviors. The size and design of the sample have direct influence on both of these.

The vast majority of the results of the WSSAHB will be reported in terms of incidence and prevalence estimates, i.e., the *proportion* of students exhibiting a certain attitude or behavior. The precision of a survey's estimate of a proportion is generally represented by the *standard error of the estimate* which is typically used to form a "confidence interval" around the obtained estimates. For example, if the survey indicated that 25 percent of high school seniors carried a weapon to school in the past month, a 95 percent confidence interval would add/subtract nearly two standard errors to this estimate. If the standard error of this estimate were 1 percent, the use of the confidence interval would yield an

interpretation something like "we are 95 percent certain that between 23 percent and 27 percent of high school seniors carried a weapon in the past month." The magnitude of the standard error of estimate is very much a function of the size and design of the survey sample.

The most straightforward case is represented by a simple random sample of  $n$  independent observations taken from a population of size  $N$ . The standard error of the estimated proportion,  $p$ , is given by:

$$S_p = \sqrt{\frac{(N-n)}{N} \frac{(pq)}{n}}$$

where  $s_p$  = standard error  
 $p$  = sample proportion  
 $q = (1-p)$   
 $n$  = size of sample  
 $N$  = size of population

In this simplest of cases, the standard error of estimate is influenced by the size of the sample and its relation to the size of the population (termed the "sampling fraction") as well as the actual value of the proportion itself. In general, the larger the sample size  $n$  and the more closely it approaches the population size  $N$ , the lower will be the standard error of the estimate. At its limit, i.e., when the sample size,  $n$ , actually equals the population size,  $N$ , the standard error is zero. This reflects the fact that when we have "sampled" the entire population, we are no longer estimating at all—we have the actual population value.

The value of the estimated proportion,  $p$ , also influences the size of the standard error. When  $p = .5$  (i.e., when 50 percent of the sample exhibit a certain behavior or attitude), the standard error is at its maximum. As the proportion moves toward its limits of 0 or 1, the standard error decreases.

Exhibit 2-5 is a display of the standard error of a proportion,  $s_p$ , for illustrative values of  $p = .50$  and  $p = .90$ , and sample sizes ranging from 20 to 600. It shows the decrease in standard error with increasing sample size and the comparative standard errors when estimating proportions near .50 or near .90 (equivalently, .10).

**Exhibit 2-5**  
**Standard Error of a Proportion, p as a Function of Sample Size and P**

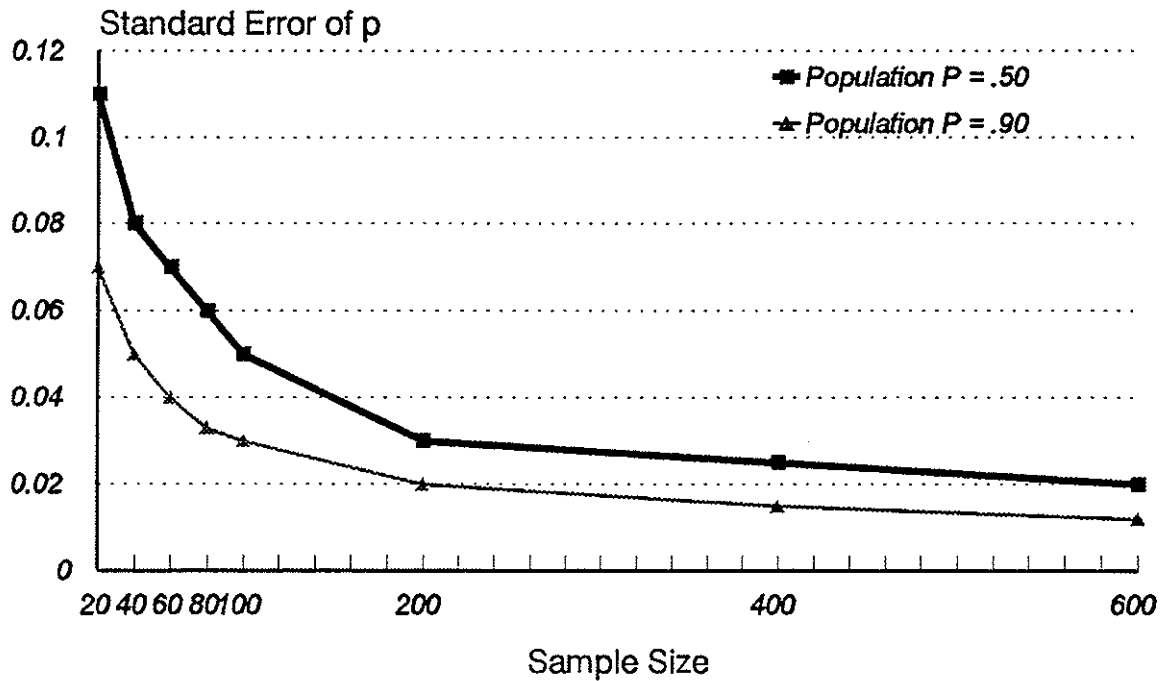


Exhibit 2-6 shows illustrative calculations of standard error for sample sizes likely to be encountered in the WSSAHB (e.g., statewide or regional totals) and taken from a statewide grade-level population of approximately 60,000.

**Exhibit 2-6**  
**Illustrative Standard Errors of Estimate for  $p = .5$  and  $p = .9$**   
**Simple Random Sampling<sup>1</sup>**

Sample Size	Illustrative Values of $p$	
	$p = 0.5$	$p = 0.9$
1,000	0.0157	0.0094
2,000	0.011	0.0066
3,000	0.0089	0.0054
4,000	0.0076	0.0045
5,000	0.0069	0.0042
6,000	0.0062	0.0037

<sup>1</sup> Uses population  $N=60,000$

These standard errors, as noted earlier, apply only when a simple, random sample is taken from the entire population. The sampling design used in this survey is far more complex. First, it is stratified on two factors: geographic region and school size. Secondly, it is a cluster sample. Schools, rather than individual students are the sampling unit.

In general, the influence of stratification has less impact on standard error than does the cluster sampling strategy. Sampling strata are typically employed when they represent important features of the population along which survey estimates will be compared or when the variance of estimates can be reduced by the more homogeneous groupings that strata represent (Kish, 1965). The former is clearly true for geographic region and urbanicity. School size is included as a sampling stratum primarily for its utility in the cluster sampling scheme described below.

Cluster sampling has important effects on the standard error of survey estimates. For example, if we sample 1,000 students from 50 schools, we must consider the number of independent observations in our sample as 50, rather than 1,000. It is likely that the attitudes or behaviors of 20 students from the same school would bear some relationship to each other. Hence, they cannot be viewed as independent (as they would be if they were 20 individual students selected from the full list of 60,000 students across the state at that grade level). To the extent that their responses are intercorrelated within a school, then, our sample size "shrinks" from a maximum of 1,000 to a minimum of 50. The degree to which this sample size "shrinks" from the number of students to the number of primary sampling units (PSUs) depends upon the intercorrelation or homogeneity of responses of individual students within the

PSUs, i.e., schools. The influence of the cluster sampling process on standard error estimates (termed the sampling "design effect") such as those calculated in Exhibit 2-5 is calculated as follows:

$$\text{Design Effect} = (1 + \rho(a-1))^{1/2}$$

where  $\rho$  = intraclass correlation

a = average cluster size

Sudman (1976) has provided helpful estimates of these interrelationships, termed *intraclass correlations* or *homogeneity coefficients*. In practice, they range from values of .40 for highly similar indicators such as economic or employment data within neighborhoods to .05 for more individualized behaviors such as health practices. Pollard (1995) calculated estimates for the recent statewide alcohol, tobacco, and other drug (ATOD) use survey in Oregon schools. For these behaviors, the intraclass correlations ranged from .00 to .03, with a modal value of .01. Using this modal value, the cluster sampling design effect is approximately 1.26 for small elementary schools (averaging 60 students at a grade level) and 2.00 for large high schools (averaging 300 at a grade level). Applying this to the illustrative standard errors calculated above yields the range of values for varying sample sizes and values of  $p$ , shown in Exhibit 2-7.

**Exhibit 2-7**  
**Illustrative Standard Errors of Estimate for  $p = .5$  and  $p = .9$**   
**Cluster Sampling Under Current WSSAHB Sampling Design<sup>1</sup>**

Sample Size	Illustrative Values of $p$			
	<i>Small Schools</i>		<i>Large Schools</i>	
	$p = 0.5$	$p = 0.9$	$p = 0.5$	$p = 0.9$
1,000	0.0198	0.0118	0.0314	0.0188
2,000	0.0136	0.0083	0.022	0.0132
3,000	0.0112	0.0068	0.0178	0.0108
4,000	0.0096	0.0057	0.0152	0.009
5,000	0.0087	0.0053	0.0138	0.0084
6,000	0.0078	0.0047	0.0124	0.0074

<sup>1</sup> Uses population  $N=60,000$

These values range from a high of approximately 3 percent to less than .5 percent, depending upon sample size, cluster size, and whether these are high/low prevalence behaviors ( $p = .9$  or  $.1$ ) or those exhibited by about half of the students ( $p = .5$ ).

The actual standard error values used in the interpretation of the 1995 WSSAHB results will be calculated from more precise statistics arising from the actual survey effort (e.g., the empirical  $p$  values, cluster sizes, and homogeneity coefficients), but the values shown above in Exhibit 2-7 will likely be quite close to these more empirical estimates. These estimated standard errors suggest that when sample sizes are in the 3,000 or higher range, such as for statewide estimates at each grade, the standard errors will be .5 to 1 percent. At a regional level, where sample sizes may be closer to 1,000 or 2,000, we will interpret results with standard errors of 1.5 to 2 percent. As results are further disaggregated by student or school characteristics within region, these sample sizes may become smaller and standard errors larger still.

The standard error estimates calculated above are also based on a theoretical formulation in which such applied concerns as response rate and response bias are not accounted for. The magnitude of these influences in the current survey are discussed in subsequent chapters of this technical report.

## **Chapter 3: Data Collection Protocol**

Following the design of the survey tool and the sampling process, the next step was to communicate with the field—solicit the cooperation of the sampled schools, make the survey available to other "volunteer" schools that wished to participate because they valued the results, sending instructional and administration materials to participating schools, and coordinate the statewide administration of the survey. In this chapter we describe the materials sent to local administrators and the permission process for participating in this voluntary survey.

### **Materials Sent To Local Coordinators**

Materials were sent to local survey coordinators in February 1995 to provide them with common information to be used in notifying parents about the survey. These materials included a sample letter to be used or adapted and sent to parents, a rationale and description of survey content, a survey fact sheet, and information on the influence of "risk" and "protective" factors on adolescent problem behaviors.

In addition, local survey coordinators received a copy of the information on file at RMC Research Corporation regarding their school (e.g., name of the contact person, mailing address, number of participating students, etc.). Local coordinators were asked to inform RMC of any necessary corrections to these data.

Also included in the mailing were draft copies of the survey coordinator administration guidelines, survey administration instructions, and a list of resource telephone numbers entitled "If I Need Help." Final copies of these materials were included with the actual surveys when they were distributed in March. Interested readers will find copies in the appendix.

Finally, survey coordinators were informed that a Spanish language version of the survey was available and that they could obtain a copy which they could duplicate by informing RMC Research of their need. Coordinators were also encouraged to make a decision regarding what alternative activity would be provided to those students in attendance who elected not to participate in the survey.

### **Rationale and Description of Survey Content**

This four-page document provided information about why the survey was being administered and what questions were on the survey. The sponsoring state agencies were identified, and mention was made that the survey was an expanded version of three previous statewide survey efforts. The content of the



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survey was described under seven major headings, along with the importance of and rationale for including this content. The seven headings were:

- ◆ Student background information.
- ◆ Nutrition and physical activity.
- ◆ Alcohol, tobacco, and other drug use.
- ◆ Prevention activities.
- ◆ Risk and protective factors.
- ◆ Injury-related behaviors.
- ◆ Sexual behavior and HIV/AIDS awareness (questions in this area were drawn from the state health curriculum and related to awareness only—no questions about sexual practices or beliefs were asked). Sample items were also provided.

## **Fact Sheet**

The three-page fact sheet detailed answers to commonly asked questions about the survey. Topics covered in the fact sheet included the purpose and focus of the survey, sampling of schools and opportunities for non-sampled schools to participate, the anonymous and voluntary nature of the survey, timeline and time requirements for survey administration, the nature of the questions, honesty of student responses, and where one could go to review a copy of the survey. Finally, several important examples of how the survey results will be used were provided.

## **The Influence of "Risk" and "Protective" Factors on Adolescent Problem Behaviors**

Because the survey included a number of items related to risk and protective factors, this one-page document was created to introduce the concepts of risk and protective factors to parents and communities considering participation in the survey. The use of these concepts in program planning was emphasized as was the need for gathering data if this conceptual framework was to be applied to guide and improve prevention programs.

## **Sample Letter to Parents**

The sample letter to parents, which could be used "as is" or modified to suit the needs of a given school, was intended to inform parents of all pertinent details of the survey administration. The letter, to be signed by the school principal or district superintendent, was both brief and complete. Parents were informed of the importance of the survey, as well as who the sponsoring agencies were. The content of the survey was described, and parents were invited to view a copy of the survey in the principal's or district superintendent's office. Parents were informed that the survey was being administered under contract with RMC Research Corporation, and the name and telephone number of the project director were provided.

Parents were also informed that the survey was completely anonymous and voluntary, and that any students who chose not to participate would be provided with an alternative activity. They were also informed that results would be presented in aggregate form only, and that these results would serve important program planning and evaluation purposes.

Finally, parents were asked to let the person sending the letter (i.e., the principal or superintendent) know if they did **not** wish to have their son or daughter participate. This represents what is termed a "passive" permission protocol.

## **Administration Instructions**

### **Survey Coordinator Administration Guidelines**

The survey administration guidelines were written for use by local contact persons and detailed the steps necessary to administer the survey. Before the survey, coordinators were to announce the survey, select a date for administration, prepare materials, and train those teachers who would be administering the survey. On the day of administration, coordinators were to distribute materials, collect materials following the administration, and then package and return the materials to the contractor.

### **Survey Administration Instructions**

These instructions were prepared for use by teachers or other school staff administering the survey in the classroom. The instructions began with an introduction to the survey and a reminder that student participation was voluntary and that student responses were completely anonymous. Teachers were informed of the scheduling requirements of the survey administration. They were asked to check materials received and were reminded of the need to emphasize the importance of the survey to participating students. Teachers were informed of the opportunity for students to participate in an alternative activity if they chose not to participate in the survey administration.

Instructions to be read verbatim to the class by the survey administrator were also provided. The purpose of these instructions was to ensure a standardized survey administration.

### **If I Need Help**

This sheet was provided for use by students who, after completing the survey, may have had questions or feelings about which they would like to seek help. Students were encouraged to contact a trusted adult in their school, a trusted adult in their family or community, or to call one of the resource numbers provided for information on where to seek further help. Telephone numbers for 18 resources addressing a variety of problems were included.

### **Results of Telephone Survey of Local Contact People**

A couple of weeks following the survey administration, a sample of local coordinators were contacted in an effort to learn about their experience with the survey administration. In general, the coordinators thought that the administration had gone smoothly, that one class period had been sufficient time for students to complete the survey, and that students had taken the survey seriously. The alternative activity provided to students had been either study time or library time. Most coordinators indicated that they would participate in the survey again next time although a few mentioned that it would depend on the survey content. Coordinators also provided several comments and suggestions regarding the process in which the survey was handled.

## Chapter 4: Results of Survey Administration

### Results of School Recruitment

Schools were drawn at random within the cells of the design to be included in the statewide sample. At the same time (October 1994), a review copy of the survey was distributed to a variety of school and community personnel (including educational service district alcohol education coordinators, Drug-Free Schools and Communities Act program coordinators, community mobilization program coordinators, county prevention coordinators, members of the Washington Interagency Network Against Substance Abuse, school nurses, and school health education coordinators). This process yielded much public concern about the length, content, and wording of the survey. This concern led to considerable negative media attention and public discourse. Although the survey was considerably revised in response to this criticism, an atmosphere had been created which, as may be seen in the response rates, was never fully overcome.

Exhibit 4-1 below details, by region within grade, the number of schools targeted, the number asked to participate (that is, sampled plus replacement schools), and the number which ultimately did participate. The school response rate (number participating divided by number asked) and cell completion rate (number participating divided by number targeted) are also provided.

**Exhibit 4-1**  
**Number and Percent of Schools Agreeing to Participate in Statewide Sample**

<i>Grade 6</i>					
Region	Target Schools	Asked to Participate	Agreed to Participate	School Response Rate	Cell Completion Rate
<b>Eastern</b>	17	48	19	40 percent	118 percent
<b>Southwest</b>	14	41	10	24 percent	71 percent
<b>Puget Sound</b>	23	59	6	10 percent	26 percent
<b>Northwest</b>	8	31	6	19 percent	75 percent
<b>TOTAL</b>	62	179	41	23 percent	66 percent

Exhibit 4-1, continued

<i>Grade 8</i>					
<b>Region</b>	<b>Target Schools</b>	<b>Asked to Participate</b>	<b>Agreed to Participate</b>	<b>School Response Rate</b>	<b>Cell Completion Rate</b>
Eastern	14	38	7	18 percent	50 percent
Southwest	10	31	8	26 percent	80 percent
Puget Sound	12	28	4	14 percent	33 percent
Northwest	4	13	2	15 percent	50 percent
<b>TOTAL</b>	40	110	21	19 percent	53 percent

<i>Grades 10 and 12</i>					
<b>Region</b>	<b>Target Schools</b>	<b>Asked to Participate</b>	<b>Agreed to Participate</b>	<b>School Response Rate</b>	<b>Cell Completion Rate</b>
Eastern	14	43	15	35 percent	107 percent
Southwest	9	27	5	19 percent	56 percent
Puget Sound	12	24	3	13 percent	25 percent
Northwest	5	15	4	27 percent	80 percent
<b>TOTAL</b>	40	109	27	25 percent	68 percent

As may be seen from these tables, the response rate is 23 percent for Grade 6, 19 percent for Grade 8, and 25 percent for Grades 10 and 12. Grades 10 and 12 are considered together, as selected high schools contained both grades and were therefore asked to survey them both, thus reducing the sampling burden. For each grade, the response rate varied by region from as low as 10 percent to as high as 40 percent. Within the regional variations, the Puget Sound region consistently had the lowest response rate. Readers should note that due to small populations with similar geographic characteristics, the central/southeast and northeast regions defined in the sampling plan were combined into a single eastern region for the purpose of analysis.

The "cell completion rate" reflects our level of success in completing the sampling scheme. It disregards whether a school was initially designated as "sample" or "replacement," viewing them interchangeably as they contribute to reaching the target sample size. Thus the cell completion rate better reflects progress in completing the sampling plan but ignores possible selection bias when there

is a high refusal rate. This index was more promising: 66 percent for Grade 6, 53 percent for Grade 8, and 68 percent for Grades 10 and 12. As with response rates, there was considerable variation in completion rates among regions. However, the Puget Sound region again consistently had the lowest completion rate.

Ultimately, in looking at response rates or cell completion rates, the issue of paramount concern is the representativeness of the sample to the population from which it was drawn. Most simply, representativeness is assured by having a high level of response from a randomly selected sample. In the absence of a high response rate, however, it is necessary to investigate whether or not those students who responded are similar to those who did not, as Lessler and Kalsbeek (1992) note:

*It is important to remember that while a rate tells us the extent of nonresponse, it does not explicitly indicate the impact of the nonresponse on survey estimates. Low response rates point only to a potential for severely affected estimates ... In fact, the ultimate effect of nonresponse in a survey with a 90 percent response rate but a large respondent-nonrespondent difference may be more severe than a survey with an 80 percent response rate but small respondent-nonrespondent differences. Another factor to consider is how good the rate is in light of past experience with similar surveys (p. 116).*

In 1992, the "cell completion rate" of the WSSAHB was approximately 45 percent—somewhat lower than that seen here (Einspruch and Pollard, 1993). Data are not available on the "response rate" index as it is defined here. Recall that this was the first year the full spectrum of health behaviors was included in the survey. In previous years, when the content concerned only alcohol, tobacco, and other drug use behaviors, the completion rates were 60–70 percent (Deck and Nickel, 1989) and 70–80 percent (Gabriel, 1991).

## Survey Returns

Exhibit 4-2 details the number and percentage of students participating in the survey. Two columns are included in the exhibit to distinguish between "sample" schools—those providing data for the state and regional estimates—and volunteer or "piggyback" schools—that wished to participate in order to obtain valid, objective data on the incidence and prevalence of these health behaviors among students in their schools.

As shown in the exhibit, 12,723 surveys were mailed to sample schools. A total of 7,977 students were enrolled in classrooms which completed the class header sheet. Of those students, approximately 10 percent were absent the day of administration, nearly 3 percent elected to participate in the alternative activity rather than the survey, and just over 3 percent were unable to participate for other reasons.

According to the class header sheets, a total of 6,679 students (84 percent of students enrolled) completed the survey.

Through the actual processing of individual booklets, a total of 9,196 surveys were returned to RMC Research Corporation from the sampled schools. Of these, 3 percent could not be processed due to missing information, and 1 percent of the surveys were discarded due to inconsistent or dishonest responses. The figure 6,679 presented above is smaller than the total returned due to missing class header sheets. It is not clear whether local survey coordinators failed to distribute the missing sheets, teachers ignored the packing instructions, or a combination of both.

**Exhibit 4-2**  
**Number and Percent of Students Participating in Survey.**

Percent of Students Participating	Sample	Piggyback
1993-94 Public School Enrollment at Grades 6, 8, 10, and 12	257,750	
Number of surveys mailed to participating schools (Percent of statewide enrollment)	12,723 (4.9)	20,906 (7.6)
Information from Class Header Sheets	Sample	Piggyback
Number of students enrolled in participating classrooms where teachers completed the class header sheet	7,977	15,236
Students absent when survey was administered (Percent of students enrolled)	816 (10.2)	1,549 (10.2)
Students electing alternative activity (Percent of students enrolled)	214 (2.7)	769 (5.0)
Students unable to participate for other reasons (Percent of students enrolled)	268 (3.4)	836 (5.5)
Students completing the survey (Percent of students completing survey)	6,679 (83.7)	12,082 (79.3)
Survey Booklets Processed	Sample	Piggyback
Number of surveys returned	9,196	12,739
Surveys which could not be processed due to missing information or wrong grade level (Percent of surveys returned)	323 (3.1)	487 (3.8)
Surveys discarded due to dishonesty or inconsistent responses (Percent of surveys returned)	93 (1.0)	133 (1.0)
Valid surveys included in the analysis from sample schools	8,780	12,119

About 3 percent of the surveys could not be used since the student left key information (such as their grade) blank or because they were enrolled in a grade other than 6, 8, 10, or 12. To ensure that prevalence estimates were based only on valid responses, several criteria were used to exclude surveys



with dishonest or inconsistent responses:

- ♦ Student admits answering "dishonestly."
- ♦ Student admits answering "somewhat honestly" and claims use of a fictitious drug.
- ♦ Student responded inconsistently to three or more pairs of related items (e.g., claims 30-day use of a substance on one item and no use in lifetime on another item).

In the end, 8,780 surveys were valid for inclusion in the statewide analysis of sample schools. An additional 12,119 valid surveys were received from non-sampled schools that chose to survey their students (so-called "piggyback" schools).

### Sample Sizes: Weighted and Unweighted

Exhibit 4-2 details the number of students in each grade from sampled schools in each region that completed the survey. This exhibit shows both the unweighted and weighted sample sizes. The sampling procedure used in this survey, i.e., oversampling of racial/ethnic minorities, requires us to use a weighting procedure to adjust resultant estimates to reflect these students' actual occurrence in the population. In discussing the statistical aspects of weighting, Kish (1975) warns survey researchers:

*Before introducing unequal weights, we should consider the several factors that it may involve: (1) reduction of some biases; (2) possible introduction of other biases; (3) increase of the variance; (4) complication of computations...On the one hand, large or potentially large biases should be avoided. But the elimination of a small bias should not be bought at the cost of a greater increase in the variance. (p. 426)*

Weighting is employed at the regional level to adjust the results for the oversampling of schools with high concentrations of racial/ethnic minorities. Regional results are also weighted to reflect their actual proportion of the overall state population. For example, if the eastern region includes only 15 percent of the state's student enrollment, but its participating schools account for a much larger proportion of the obtained survey sample, its results are weighted downward to avoid their disproportionate influence on the statewide estimates.

As may be seen, the number of respondents decreases as grade level increases, so that while close to 3,000 sixth grade students completed the survey, only 1,300 twelfth grade students completed the survey. As foreshadowed by the "cell completion rate" statistics reported earlier, the number of respondents in either the grade or the region strata was somewhat less than the number targeted.

**Exhibit 4-3**  
**Sample Size by Region and Grade**

Region	Unweighted				Weighted			
	6	8	10	12	6	8	10	12
Eastern	1,242	482	881	412	729	644	522	331
Southwest	495	708	334	217	614	552	466	291
Puget Sound	427	992	574	411	1,068	928	800	493
Northwest	693	323	317	267	446	386	319	192
<b>TOTAL</b>	<b>2,857</b>	<b>2,510</b>	<b>2,106</b>	<b>1,307</b>	<b>2,857</b>	<b>2,510</b>	<b>2,106</b>	<b>1,307</b>

At a statewide level, the weighting procedure has adjusted for the disproportionality. In general, results from the eastern region are weighted lower and those from Puget Sound higher to reflect their population proportions.

### Representativeness

As mentioned above, an important issue under consideration with regard to the number of surveys completed and the participant response rate is how well the sample represents the population from which it was drawn on demographic characteristics, although there may be other unmeasured differences between participating and non-participating schools. In order to address this issue, demographic characteristics of the sample may be compared with those of the population. Such comparisons are displayed in Exhibit 4-3 along the key dimensions of gender, racial/ethnic group, region, and community type. These comparisons are made for each of the four grades surveyed. While there is some variation across grades, Exhibit 4-3 may be summarized by the following statements.

- ◆ There was a close match (within a difference of 3 percentage points) between the gender distribution of respondents and of students statewide.
- ◆ Students indicating membership in the Hispanic racial/ethnic group were slightly over-represented, while white, non-Hispanics were somewhat under-represented.
- ◆ The regional distribution of the sample nearly exactly matched the regional distribution of the student population.

- ♦ Students in metropolitan core areas were somewhat under-represented (by 9 to 13 percentage points). In contrast, students in non-metropolitan urban areas were rather over-represented (by 7 to 11 percentage points).

Exhibit 4-5 summarizes the differences between the weighted sample and the state population by grades. Clearly the weighting scheme produced a close match for region and within 1 to 3 percentage points for gender. There was more variation for racial/ethnic group with the Hispanic group over-represented and the white, non-Hispanic group under-represented. The largest discrepancies were for type of community, with metro core generally under-represented and non-metro urban over-represented.

**Exhibit 4-4**  
**Representativeness of Sample by Grade**

<i>Grade 6</i>			
<b>Characteristic</b>	<b>Actual Sample</b>	<b>Weighted Sample</b>	<b>State</b>
<i>Number of Students</i>	2,857	2,857	71,802
<b>Gender</b>			
Female	50.0	49.6	48.7
Male	50.0	50.4	51.3
<b>Racial/Ethnic Group</b>			
American Indian	3.7	5.0	6.1
Asian, Pacific Islander	3.8	5.4	4.5
Hispanic	13.8	12.0	6.4
Black, not Hispanic	2.9	4.9	2.6
White, not Hispanic	75.8	72.8	80.5
<b>Region</b>			
Eastern	43.5	25.5	25.5
Southwest	17.3	21.5	21.9
Puget Sound	14.8	37.4	37.4
Northwest	24.3	15.6	15.2
<b>Community</b>			
Metro core	20.2	25.2	18.3
Non-metro urban	41.2	36.6	34.9
Suburban	25.7	25.9	27.4
Rural	12.9	12.3	19.5

Exhibit 4-4, continued

<i>Grade 8</i>			
<b>Characteristic</b>	<b>Actual Sample</b>	<b>Weighted Sample</b>	<b>State</b>
<i>Number of Students</i>	2,510	2,510	67,285
<b>Gender</b>			
Female	51.5	50.4	48.5
Male	48.5	49.6	51.5
<b>Racial/Ethnic Group</b>			
American Indian	2.6	3.1	2.5
Asian, Pacific Islander	5.5	5.0	5.5
Hispanic	9.6	9.9	5.8
Black, not Hispanic	2.7	4.0	4.4
White, not Hispanic	79.6	78.0	81.9
<b>Region</b>			
East	19.2	25.7	25.7
Southwest	28.8	22.0	22.5
Puget Sound	38.7	37.0	37.0
Northwest	12.9	15.4	14.8
<b>Community</b>			
Metro core	3.4	8.4	17.7
Non-metro urban	42.2	46.0	35.5
Suburban	19.7	17.0	27.5
Rural	34.8	28.6	19.5

Exhibit 4-4, continued

<i>Grade 10</i>			
<b>Characteristic</b>	<b>Actual Sample</b>	<b>Weighted Sample</b>	<b>State</b>
<i>Number of Students</i>	2,106	2,106	64,677
<b>Gender</b>			
Female	51.8	51.6	48.4
Male	48.2	48.4	51.6
<b>Racial/Ethnic Group</b>			
American Indian	3.0	3.8	2.5
Asian, Pacific Islander	5.4	6.6	6.4
Hispanic	15.0	12.3	5.7
Black, not Hispanic	1.6	1.7	4.1
White, not Hispanic	75.0	75.6	81.3
<b>Region</b>			
Eastern	41.8	24.8	24.9
Southwest	15.9	22.1	22.9
Puget Sound	27.3	38.0	37.8
Northwest	15.1	15.1	14.4
<b>Community</b>			
Metro core	3.1	5.3	18.3
Non-metro urban	45.3	50.1	35.9
Suburban	30.1	34.2	27.8
Rural	22.3	10.3	18.0

Exhibit 4-4, continued

<i>Grade 12</i>			
<b>Characteristic</b>	<b>Actual Sample</b>	<b>Weighted Sample</b>	<b>State</b>
<i>Number of Students</i>	1,307	1,307	53,986
<b>Gender</b>			
Female	49.3	49.8	47.9
Male	50.7	50.2	52.1
<b>Racial/Ethnic Group</b>			
American Indian	3.3	4.1	2.1
Asian, Pacific Islander	6.7	6.8	7.2
Hispanic	8.7	8.8	4.8
Black, not Hispanic	1.4	1.2	3.2
White, not Hispanic	79.9	79.2	82.6
<b>Region</b>			
Eastern	31.5	25.4	25.2
Southwest	16.6	22.3	23.2
Puget Sound	31.4	37.7	37.3
Northwest	20.4	14.7	14.3
<b>Community</b>			
Metro core	2.3	6.0	17.4
Non-metro urban	45.3	49.9	36.4
Suburban	30.1	33.5	29.5
Rural	22.3	10.7	16.7

**Exhibit 4-5**  
**Percentage Point Difference Between Weighted Sample and Population**

Characteristic	Grade 6	Grade 8	Grade 10	Grade 12
<b>Gender</b>				
Female	+1	+2	+3	+2
Male	-1	-2	-3	-2
<b>Racial/Ethnic Group</b>				
American Indian	-1	+1	+1	+2
Asian, Pacific Islander	+1	=	=	=
Hispanic	+6	+4	+7	+4
Black, not Hispanic	+2	=	-3	-2
White, not Hispanic	-8	-4	-6	-3
<b>Region</b>				
Eastern	=	=	=	=
Southwest	=	=	=	=
Puget Sound	=	=	=	=
Northwest	=	=	=	=
<b>Community</b>				
Metro core	+7	-9	-13	-11
Non-metro urban	+2	+10	+15	+13
Suburban	-1	-10	+7	+4
Rural	-7	+9	-8	-6

### Impact of Missing Data

The following three exhibits (Exhibits 4-6 through 4-8) illustrate the extent of missing data in the survey results. While missing data is always a concern in this type of project, it was of particular interest in the current survey due to its length. That is, it was possible that the survey was so long that only the most efficient students would be able to complete it, and there existed the possibility that these students would have different characteristics than those students who were unable to complete the survey.

The first figure (Exhibit 4-6) shows the percentage of eighth, tenth, and twelfth grade students who did not answer any given question on Form A of the survey. As may be seen, all three grades show similar patterns, although eighth grade students tend to have slightly higher percentages. Overall, the level of missing data is rather low, remaining less than 5 percent for most items in the first two-thirds of the survey. Students appeared to become more tired in the final third of the survey as that is where the level of missing data begins to rise. Even so, the general level rises above 10 percent only for the last few items for eighth grade students.

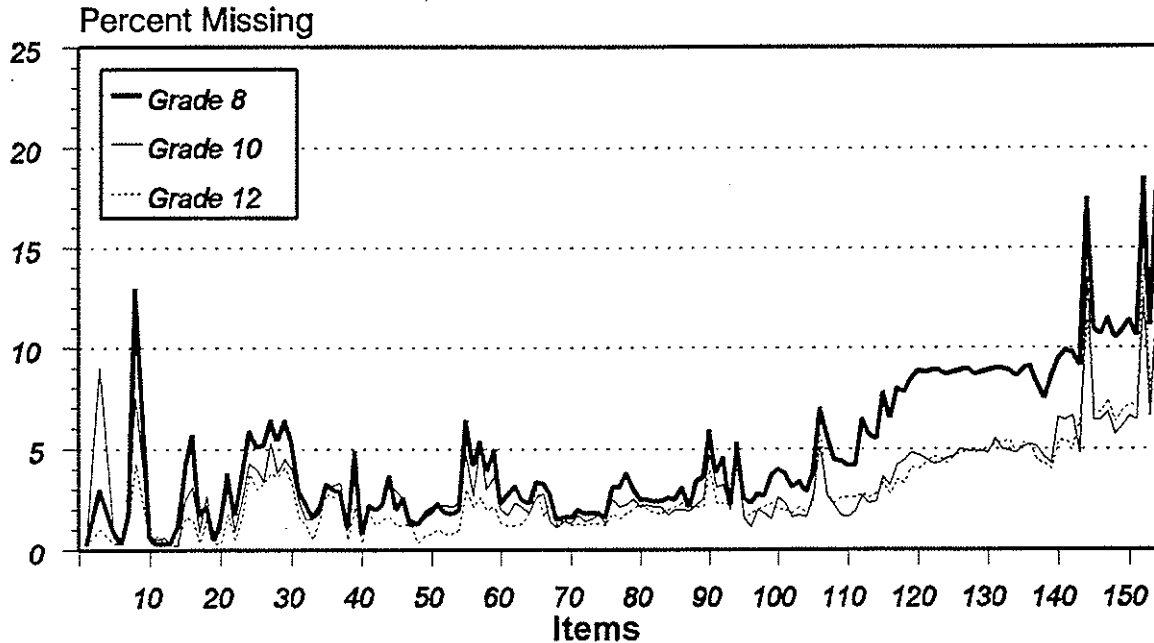
There were a few items on this form which seemed to have more missing data than what would be suggested by the general trend. These included: gender (A003), Hispanic origin (A008), dependency items (A117 to A136), and where to go to get information about different topics (A144, A152, and A154).

Exhibit 4-7 illustrates the percentage of missing data for students in these three grades on Form B of the survey. The findings for this figure are quite similar to the previous one: students in the three grades show similar patterns, the overall level of missing data is quite low, and the level of missing data begins to climb in the final third of the survey (although it still remains quite modest). It is important to note that the final questions on this form of the survey (beginning with question 151) were printed on a perforated page which districts had the option of removing from the survey before it was administered to students. The fact that some districts did indeed remove this page may be seen in the discontinuous increase in the line on this chart after it passes question 150 (up to around 20 percent of the students).

Again, there were items on this form which seemed to have more missing data than what would be suggested by the general trend. These included: gender (B003), Hispanic origin (B008), and whether or not the student had changed schools in the past year (B150)—this was the last question before the tear-off page and was in a different format than the questions that preceded it.



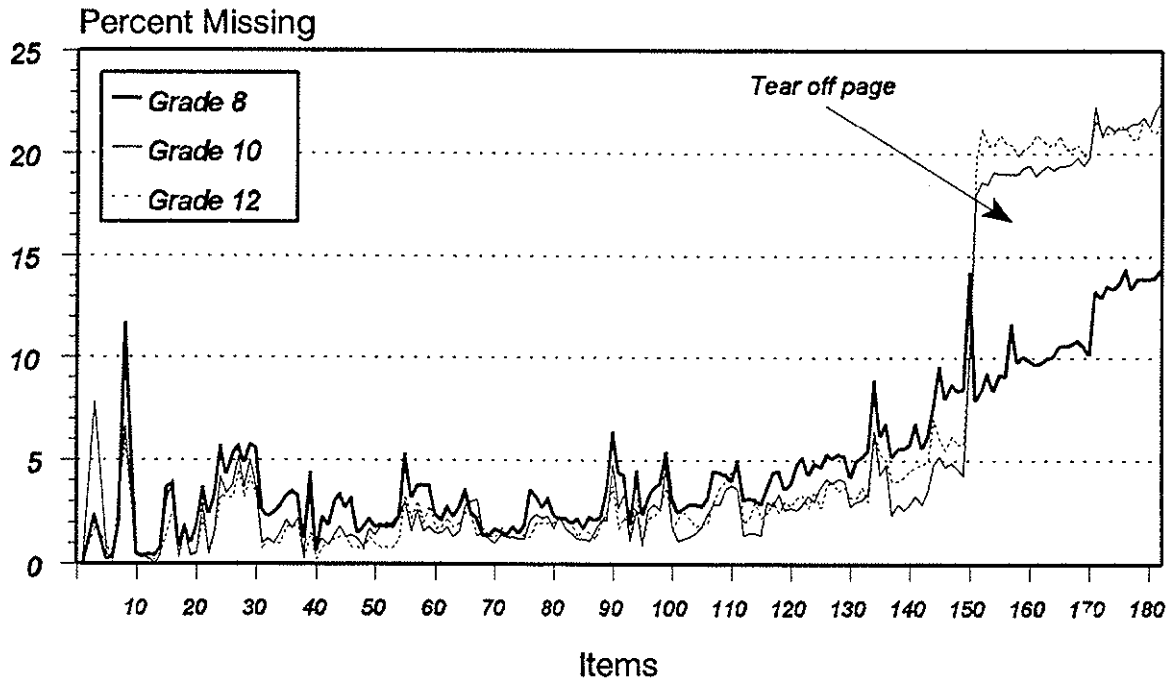
**Exhibit 4-6**  
**Percent Missing for Form A, Grades 8, 10, and 12**



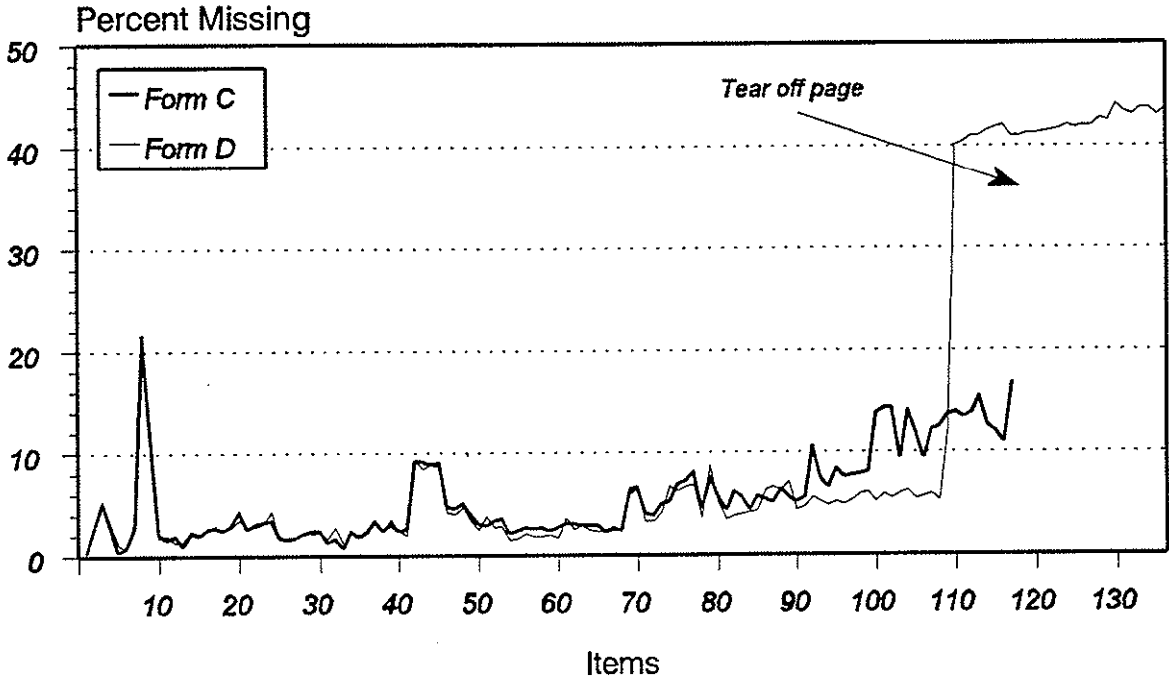
The amount of missing data for questions on the two versions administered to sixth grade students is shown in Exhibit 4-8. Once again, the level of missing data is rather low, remaining at about 5 percent for the first half of the survey. After that point, however, the level begins to climb for students completing Form C, so that by the end of the survey the level of missing data is closer to 15 percent. On Form D of the survey, which contained items on a tear-off page, the level of missing data jumps to over 40 percent for the items on that page.

Items on these forms which had atypically high levels of missing data included: gender (003 on both forms), Hispanic origin (008 on both forms), a couple of violence-related questions (040 on both forms), ease of getting a gun or ATOD (042 to 045 on both forms), friends' approval of use (C100 to C102), where to go for information about ATOD (C104), and number of times changed schools in the past year (C117—this was the last item on the survey and the only one in the second column of the page).

**Exhibit 4-7**  
**Percent Missing for Form B, Grades 8, 10, and 12**



**Exhibit 4-8**  
**Percent Missing for Grade 6, Forms C and D**



The three previous figures are summarized in Exhibit 4-9. As may be seen in this exhibit, most every student who began the survey also completed it. The exception, of course, is for Forms B and D, which contained items printed on a final page which some districts elected to remove so that students were not presented with those items. In sum, it does not appear that the survey was too long for eighth, tenth, and twelfth grade students. However, some sixth grade students may have found Form C of the survey to be a bit long. All in all, though, the extent of the missing data is quite reasonable and would be expected to have minimal impact on the survey results.

**Exhibit 4-9**  
**Valid N for Selected Items**

<i>All Forms</i>				
Item	Grade 6	Grade 8	Grade 10	Grade 12
Total students	2,857	2,510	2,106	1,307
First item of survey (I001)	2,857	2,508	2,103	1,306
First behavioral item (I023)	2,809	2,487	2,095	1,303
Last core item (I116)	2,700	2,425	2,079	1,289
<i>Forms A and C</i>				
Total students	1,406	1,248	1,072	655
Last item of survey (I114)	1,299	1,292	999	607
<i>Forms B and D</i>				
Total students	1,395	1,258	1,034	652
Last item before tear-off page (I187)	1,256	1,130	988	613
Last item of survey (I173)	803	1,036	809	509

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## Chapter 5: Validity of Survey Results

The notion of validity in measurement is classically defined as the extent to which an instrument or procedure is measuring what it is intending to measure. In its *Standards for Educational and Psychological Testing*, the American Psychological Association, American Educational Research Association, and National Council on Measurement in Education (APA/AERA/NCME, 1985) acknowledge validity as the "most important consideration" in assessment and define it globally as:

*The appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores (p. 9).*

### Validity of Self-Report Surveys

The fundamental concept of validity in measurement is whether the instrument and procedures being used are actually measuring what they are intending to measure. In the context of the current survey effort, are the incidence and prevalence estimates obtained via the WSSAHB accurate reflections of the health risk behaviors, attitudes and risk/protective factors of students across the state of Washington?

Validity has many facets and can be looked at in a number of different ways—content, construct, concurrent, etc. The National Institute on Drug Abuse (NIDA), for example, has done extensive study of the validity of its household survey of drug use. They have examined the cognitive demands placed on respondents by some of the rather complex questions inherent in this topical area. In other words, is the accuracy of people's responses jeopardized because they have difficulty understanding what is being asked? NIDA has also investigated the burden placed on respondents by the length and occasionally intrusive content of these kinds of questions. That is, are people hesitant to answer accurately because they simply do not want to disclose this information about themselves? Finally, NIDA has also examined the correspondence of estimates of the same behaviors (e.g., cocaine use) obtained by different methods of questioning (face-to-face interviews vs. telephone interviews vs. paper and pencil surveys). Typically, when administered under conditions of assured confidentiality the results across methods correspond fairly well, although written survey methods yield uniformly higher estimates of these behaviors than do face-to-face interviews (NIDA, 1992).

When presenting results of surveys of these types of attitudes and behaviors, however, the most frequently asked question relating to validity is, simply, "How can we be sure the students are answering honestly?" As in most such surveys, the current authors have no foolproof, direct methods of assuring perfect accuracy in the WSSAHB. It is not practical, or perhaps ethical, to incorporate physiological measures of substance use (e.g., urinalysis, hair samples) to go along with the self-report surveys. Yet, as authors of the NIDA-sponsored *Monitoring the Future* survey suggest, there is considerable inferential evidence that indicates that the estimates presented here are largely valid

indicators of the incidence and prevalence of the health risk behaviors and attitudes under study (Johnston, O'Malley, and Bachman, 1993).

Perhaps the greatest assurance of validity is in the careful conditions of administration that are set for the WSSAHB.

- ◆ Students are assured that their responses will remain confidential.
- ◆ Students are instructed to not write their names on the survey forms.
- ◆ Survey administrators are instructed not to circulate around the room during the survey so as not to give the impression that they may be looking at how individual students are responding to the items.
- ◆ When finished, students return the completed survey booklet to an envelope at the front of the classroom, placing it in any order among the other surveys they wish.

More details about the administration conditions of the WSSAHB are given in Chapter 3 of this report. In addition to these administration conditions and data collection protocols, there are a number of analytical checks made on the resultant data to ensure the accuracy of WSSAHB results.

First, the WSSAHB has many internal consistency checks which yield strong evidence of reliability, a necessary condition for validity. For example, students are asked directly if they have ever tried marijuana. Later in the survey, they are asked how often they have used marijuana in the past 30 days. If a student answers "no" to the first question (lifetime prevalence), but answers "Once or twice" to the second, there is evidence of inaccuracy. Students reporting these kinds of inconsistent responses are removed from the data set. In this year's survey, only about 1 percent of the students reported in such inconsistent ways (see more detailed discussion in Chapter 4 of this technical report).

Second, over the many years of this and other health risk behavior surveys, researchers have found that these behaviors correlate in consistent ways with student characteristics, risk factors and school characteristics. When these patterns of interrelationships persist in a given survey sample, it is again suggestive that the data collected are accurate.

Third, patterns of missing data examined in this survey do not suggest any sudden volatility (and departure from honest responses) of item content. That is, there are few "spikes" in the missing data distributions described more thoroughly in Chapter 5 of this report. If students are answering haphazardly or dishonestly, they are likely doing so throughout the instrument, and this would be detected by the internal consistency checks described earlier.

Fourth, the survey contains a question asking students' use of a fictitious drug. Those who indicate they have used this drug are also discarded from the survey sample. Again, these number fewer than 1 percent.

Finally, the vast majority of students (over 97 percent), when asked, indicate they answered the survey honestly.

A careful reading of these analytical steps taken to remove inconsistent responses leads to the conclusion that these all represent ways to discard "over-reporting" students, but not "under-reporting" students. Yet the magnitude of the prevalence estimates contained in this and previous surveys of Washington students' health risk behaviors, conservative though they may be, raise great enough concern among our policymakers and citizens. If they are indeed conservative estimates, it only heightens these concerns.

## **Exclusion Criteria**

In order to assess the impact of the exclusion criteria, a comparison was made of the lifetime and 30-day use rates for five key indicators between all respondents and only the valid respondents. The results of this comparison are presented in Exhibit 5-1. As may be seen, the impact of the exclusion criteria is only slight, typically lowering the use rates by less than a percentage point. The sole exception is 30-day alcohol use among eighth grade students, where the exclusion criteria result in a 6 percentage point decrease in the prevalence rate.

**Exhibit 5-1**  
**Impact of Exclusion Criteria on Selected Indicators**

Indicator	<i>All Respondents</i>				<i>Valid Respondents Only</i>			
	6	8	10	12	6	8	10	12
<i>Number of students</i>	2,882	2,540	2,128	1,323	2,857	2,510	2,106	1,307
<b>Tobacco</b>								
Lifetime	21.2	48.3	56.2	66.4	20.9	48.1	55.9	66.4
30-day use	5.7	21.4	25.3	30.7	5.5	21.0	24.7	30.4
<b>Alcohol</b>								
Lifetime	32.3	59.1	70.7	81.3	32.2	58.9	70.7	81.2
30-day use	13.0	36.4	37.4	45.6	12.7	30.1	37.1	45.3
<b>Marijuana</b>								
Lifetime	4.2	25.2	36.9	45.3	4.1	24.8	36.7	44.9
30-day use	2.5	15.2	21.2	24.2	2.4	14.7	20.8	23.7
<b>Cocaine</b>								
Lifetime	0.8	5.3	6.9	8.2	0.8	5.0	6.4	7.5
30-day use	0.6	3.6	3.1	2.5	0.6	3.2	2.8	2.0
<b>Weapon carrying</b>								
Lifetime	16.7	25.4	23.6	20.1	16.5	25.1	23.1	19.5
30-day use	9.7	16.1	13.7	11.0	9.6	16.7	13.2	10.4



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## Chapter 6: Scale Construction

The assessment of adolescent health behaviors and related risk and protective factors involves asking a number of questions about the same behavior. For example, in determining the extent to which students use illicit drugs, questions are asked about both recency and frequency of several different substances. While there is much interest in these specific questions, local schools and health professionals often need a more global expression of the extent of illicit drug use among their students. To accomplish this, a number of composite scales—guided by empirical literature and the results of this survey—have been developed by the authors for use in this and other reports of the 1995 WSSAHB results.

Two sets of composite scales are provided to aid in the interpretation of the survey results: health behavior scales and risk or protective factor scales. Health behavior scales estimate the prevalence of health-related behaviors which pose health risk among adolescents. Risk and protective factor scales estimate the prevalence of attitudes, values, or behaviors that have been shown to predict substance use and other health risk behavior.

### Construction of Health Behavior Scales

Since the survey contains several related items portraying specific aspects of substance use, violence, or other health behaviors, it is often difficult to determine the severity of the overall problem from any individual item. Five special scales were developed by the authors in consultation with the survey policy committee, to facilitate the interpretation of the survey results: alcohol use, drug use, dependency, violent behavior, and other delinquent behavior.

Each scale portrays a continuum of health risk based on the frequency and severity of the behaviors measured by the items composing it. Each level of the composite scale is defined by specific, concrete patterns of behavior to make interpretation easier.

It is important to note that due to changes in the current survey (e.g., the deletion of items, changes in the wording of items, changes in the response options of items, etc.), the current alcohol use scale and drug use scale are no longer comparable with those composite scales from previous survey administrations. Only those individual items with similar wording and similar response options should be compared across years.

For example, in the past students were asked how often had they used each of several drugs, and for each one (smoking tobacco, beer, cocaine, etc.) they were to indicate "never," "some," "monthly," "weekly," or "daily" (each of these response options was defined for the student). In the current survey, students were asked whether they had ever used any of the listed drugs and were given "yes" and "no"

as their only response options. As another example, the current survey includes derbisol (a fake drug used to detect dishonest survey responses) in the list of drugs to which students are referred when they are asked to indicate their 30-day use of "other drugs."

Thus, those ATOD use items which may be compared across survey administrations are 30-day use of cigarettes (I042), alcohol (I044), marijuana or hashish (I045), cocaine (I046), and binge drinking (I050).

## Alcohol Use Scale

The alcohol use scale is based on the recency, frequency, and quantity of alcohol consumption. This scale follows the theoretical framework of other researchers in quantifying the drinking habits of adults (e.g. Jessor and Jessor, 1978) but adapted for adolescents. Four levels of alcohol use are defined as:

- 1. Never used**      *Never used in lifetime.*
- 2. Prior use**      *Used in lifetime but not in the last 30 days.*
- 3. Recent use**      *Used at least once in the last 30 days.*
- 4. Frequent use**      *Used ten or more times in the last 30 days or binge drinking three or more times in the last two weeks.*

These levels are determined from the responses to three items which were included in all four survey forms:

- ◆ I033 Lifetime use of alcohol.
- ◆ I044 30-day use of alcohol.
- ◆ I050 Times binge drinking in last two weeks.

This alcohol use scale is not equivalent to the scale used in prior Washington state surveys, therefore, the scale results should not be compared to past years. The wording of the items has changed and slightly different criteria were used to define the levels.

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## Drug Use Scale

The drug use scale is based on the frequency of use and the severity of the drug used. Addictive drugs such as cocaine are generally thought to pose a greater health risk. Four levels of drug use are defined as:

1. **Never used**      *Reported never having used any of the illicit drugs in lifetime.*
2. **Prior use**      *Used in lifetime but not in last 30 days.*
3. **Recent use**      *Used at least one drug in last 30 days.*
4. **Frequent use**      *Used any illicit drug ten or more times in the last 30 days, or used cocaine three or more times in the last 30 days.*

These levels are determined by lifetime and 30-day use of five substances:

- ♦ I034 and I045 marijuana.
- ♦ I035 and I046 cocaine.
- ♦ I036 and I047 inhalants.
- ♦ I037 hallucinogens.
- ♦ I041 and I048 other illicit drugs.

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

This drug use scale is not equivalent to the scale used in prior Washington state surveys, therefore, the scale results should not be compared to past years. The wording of the items has changed, more substances are included under "other drugs," and different criteria were used to define the levels of the composite scales

## Dependency Scale

While the alcohol and drug use indicators included with previous Washington state surveys portray a continuum of health risk among adolescents, they provided insufficient guidance to policymakers and treatment professionals concerning the clinical needs of frequent users. At the request of health professionals and researchers, the dependency scale was developed to clarify the severity of health risk for frequent users of alcohol and other drugs.

DASA staff adapted questions from the *Diagnostic Interview Schedule for Children* (DISC) for inclusion on the current survey. The dependency scale is intended to yield a diagnosis of substance abuse or dependency based on self-report of the clinical symptoms identified by the most recent of the *Diagnostic and Statistical Manual* (DSM-IV). The seven DSM-IV criteria are:

1. *Tolerance, as defined by either:*
  - ◆ *A need for markedly increased amounts of the substance to achieve intoxication or desired effect.*
  - ◆ *Markedly diminished effect with continued use of the same amount of the substance.*
2. *Withdrawal, as manifested by either:*
  - ◆ *The characteristic withdrawal syndrome for the substance (refer to Criteria A and B of the criteria sets for withdrawal from the specific substance).*
  - ◆ *The same (or closely related) substance is taken to relieve or avoid withdrawal symptoms.*
3. *The substance is often taken in larger amounts or over a longer period than was intended.*
4. *There is a persistent desire or a pattern of unsuccessful efforts to cut down or control substance use.*
5. *A great deal of time is spent in trying to obtain the substance (e.g., visiting multiple doctors or driving long distances), in using the substance (e.g., chain smoking), or in recovering from its effects.*
6. *Important social, occupational, or recreational activities are given up or reduced because of substance use.*
7. *The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression, or continued drinking despite recognition that an ulcer was made worse by alcohol consumption).*

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Twenty-one items (I054 through I074) are included on the survey to assess students' dependency symptoms. Responses to these items form the composite dependency scale, and its results are summarized in four levels:

- 1. No use**                    *No alcohol or drug use was reported in the last 12 months.*
- 2. No diagnosis**        *While the alcohol or drug use was reported in the last 12 months, the student reported no symptoms of abuse or dependence.*
- 3. Abuse**                    *The student marked yes for at least one symptom but did not meet the criteria for dependence.*
- 4. Dependence**        *The student reported at least three dependency symptoms by marking yes to at least one item measuring that symptom.*

Since the dependency items appear only on Form A, results are only available for about half of the respondents in Grades 8, 10 and 12. However, the survey policy committee and RMC Research decided not to report these results. The percentage of students with a dependency diagnosis was much too high compared to household survey results. Apparently students are more likely to agree to these statements in written form, and a different scoring protocol will be necessary for developing a dependency scale.

## **Violent Behavior Scale**

In light of recent concerns over youth violence in Washington and the nation as a whole, this survey includes questions about the frequency of fighting and weapon carrying. The violent behavior scale focuses on delinquent behaviors which inflict harm or have direct potential for inflicting harm to another person.

Three levels of violent behavior are defined:

- 1. None**                    *No violent behaviors reported in the last 12 months.*
- 2. Infrequent**        *Engaged in one or two violent behaviors reported in the last 12 months.*
- 3. Frequent**            *Engaged in three or more violent behaviors or in at least one behavior ten or more times in the last 12 months.*

These levels are determined from four items:

- ◆ I088 Times carried weapon in the past 30 days.
- ◆ I096 Times in physical fight in the past 12 months.
- ◆ I202 Times carried handgun in the past year.
- ◆ I206 Times attacked someone in the past year.

### **Delinquent Behavior Scale**

While violent behavior is highly visible and has increasingly focused state and national attention, other delinquent behaviors also pose risks for the adolescent or disrupt the educational climate of the school.

The levels of the delinquent behavior scale are defined as:

- 1 None**        *No delinquent behaviors reported in the last 12 months.*
- 2 Infrequent**    *Engaged in one or two delinquent behaviors reported in the last 12 months.*
- 3 Frequent**      *Engaged in three or more delinquent behaviors or in at least one behavior 10 or more times in the last 12 months.*

The levels are determined from the responses to four items which are included on all forms of the survey:

- ◆ I099 Member of gang or posse.
- ◆ I201 Times suspended from school in the past 12 months.
- ◆ I203 Times sold drugs in the past 12 months.
- ◆ I205 Times arrested in the past 12 months.

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## Weapon Carrying in School Settings

Weapon carrying has become a widely used indicator of violent behavior, so a decision was made to develop scales focusing on this more narrowly defined construct. Furthermore, it seemed appropriate to distinguish between weapon carrying at school in contrast to non-school settings due to the policy implications for public schools.

Three items not used in the violent behavior scale are used to define the recency of weapon carrying in school settings:

- ♦ 1089 Last time carried a gun to school.
- ♦ 1090 Last time carried a knife or razor to school.
- ♦ 1091 Last time carried a club, stick, pipe, or other weapon to school.

The levels of weapon carrying in school settings are defined as:

- 1 Never** Never carried a weapon to school.
- 2 Lifetime** Carried a weapon to school at least once but not in the last 12 months.
- 3 Past year** Carried a weapon to school at least once in the past 12 months but not in the last month.
- 4 Past month** Carried a weapon to school at least once in the last 30 days.

## Weapon Carrying in Non-School Settings

Three items not used in the violent behavior scale are used to define the recency of weapon carrying in non-school settings:

- ♦ 1092 Last time carried a gun.
- ♦ 1093 Last time carried a knife or razor.
- ♦ 1094 Last time carried a club, stick, pipe, or other weapon.

The levels of weapon carrying in non-school settings are defined as:

- 1 Never**        Never carried a weapon.
- 2 Lifetime**     Carried a weapon at least once but not in the last 12 months.
- 3 Past year**     Carried a weapon at least once in the past 12 months but not in the last month.
- 4 Past month**   Carried a weapon at least once in the last 30 days.

### Reliability of Health Behavior Scales

Using the empirical data from this survey effort, the internal consistency measure of reliability (coefficient alpha) of these seven composite scales of health-related behaviors were calculated. These are shown in Exhibit 6-1 below.

**Exhibit 6-1**  
**Characteristics of Health Behavior Scales**

Scale	Name	Forms	Items	Alpha
Alcohol Use	alco	all	3	0.76
Drug Use	drug	all	9	0.83
Dependency	depend	A	20	0.99
Violent Behavior	delinq1	all	4	0.81
Delinquent Behavior	delinq2	all	4	0.70
Weapon Carrying— School Settings	weap sch	all	3	0.71
Weapon Carrying— Non-school Settings	weap non	all	3	0.71

The reliabilities indicated are exceptionally high, particularly for scales composed of so few items. They give us strong confidence in the consistency of the constructs measured by these scales and in their interpretive use in the reports to come.



## Relationships Among the Health Behavior Scales

While each scale measures a different construct, there is abundant research evidence documenting the relationships among these constructs (e.g., Bensley and Van Eenwlye, 1995; Einspruch, 1993; Hawkins, Catalano and Miller, 1992). Exhibit 6-2 contains the intercorrelations among the seven behavioral scales. Consistent with expectations, there are moderate correlations among the scales. All of these intercorrelations are statistically significant ( $p < .0001$ ).

Interestingly, the correlations between alcohol and other drug use and delinquent behavior are somewhat larger than those with the violent behavior scale. More work will be needed with an expanded set of violent behaviors to explore these relationships.

**Exhibit 6-2**  
**Intercorrelations Among Health Behavior Scales**

	Alcohol Use	Drug Use	Violent Behavior	Delinquent Behavior	Weapon Carrying to School
Drug Use	0.61				
Violent Behavior	0.32	0.35			
Delinquent Behavior	0.41	0.55	0.49		
Weapon Carrying— School Settings	0.29	0.36	0.57	0.43	
Weapon Carrying— Non-school	0.32	0.36	0.62	0.41	0.66

## Construction of Scales Measuring Risk and Protective Factors

Empirical research over the past two decades has clearly shown that adolescent health behaviors such as violence, alcohol, tobacco, and other drug use and delinquency are associated with characteristics of individuals, families, schools, and communities which have come to be known as "risk factors" (e.g., Hawkins, Catalano and Miller, 1992). There is substantial evidence that young people who experience

many of these risk factors are more likely to develop serious problems with any of these health risk behaviors.

In addition to these risk factors, research has also identified a number of "protective factors" in the lives of young people that reduce the likelihood of problem behaviors even in the face of high risk (e.g., Benard, 1991; Werner and Smith, 1992). These positive influences which relate to health development in young lives can be translated into effective prevention efforts for all youth.

The Washington State Survey of Adolescent Health Behaviors included substantial coverage of risk and protective factors using instrumentation developed by the Social Development Research Group at the University of Washington (Pollard *et al*, 1994). In all, 28 risk or protective factors were assessed and organized into the four domains of community, family, school and peer/individual. A brief description of each of these scales and their psychometric characteristics follow.

## Risk Scales

In the community domain, one protective and five risk factors are assessed:

- ◆ **Neighborhood Attachment** (items I117–I119)—the extent to which students feel a part of the neighborhood in which they live; whether what they do there makes a difference in their lives.
- ◆ **Community Disorganization** (items I120–I124)—the extent to which people in the community take part in important decisions or processes that affect their lives.
- ◆ **Transition and Mobility** (items I125–I128)—communities that experience high rates of mobility in their populations frequently experience higher rates of problem behaviors.
- ◆ **Laws and Norms Favorable to Drug Use** (items I129–I131, I136–I138)—the attitudes and policies a community holds in relation to health and problem behaviors are communicated in a variety of ways—laws, social practices, expectations—and these have an important influence on health and problem behaviors.
- ◆ **Perceived Availability of ATOD and Firearms** (items I139–I143)—the perception of availability or access to alcohol, drugs, or firearms can increase the likelihood of engaging in these behaviors with serious consequences.
- ◆ **Rewards for Conventional Involvement** (items I144–I146)—when young people are rewarded for positive participation in activities that are important in their development, it is less likely that they will engage in high-risk health behaviors.

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In the family domain, five risk and two protective factors are included in the WSSAHB:

- ◆ **Poor Family Management** (items I147–I152)—parents failure to provide clear expectations and monitoring of their children's behavior places their children at higher risk of engaging in health risk behaviors.
- ◆ **Poor Family Discipline** (items I153–I155)—parents exercising inconsistent, unusually harsh or severe punishment on their children again places them at higher risk.
- ◆ **History of Antisocial Behavior** (items I132–I135, I156–I161)—when children are raised in a family with a history of these health risk behaviors (violence or ATOD use), it is more likely that they will engage in them themselves.
- ◆ **Parental Attitudes Favorable Toward Antisocial Behavior** (items I162–I167)—even if they do not engage in the antisocial behavior themselves, if parents accept or condone it, their children are more likely to participate in it.
- ◆ **Low Family Attachment** (items I168, I170, I172–I173)—as in the community, young people who do not feel a valued part of their family are more at risk to engage in unhealthy behaviors.
- ◆ **Opportunities for Positive Involvement** (items I174–I176)—young people exposed to more opportunities to participate meaningfully in the responsibilities and activities of the family are less likely to engage in health risk behaviors.
- ◆ **Rewards for Conventional Involvement** (items I169, I171, I177–I178)—as in the community domain, young people who are rewarded for their participation with the family are less likely to participate in the negative behaviors.

In the school domain, the WSSAHB assessed two risk and two protective factors

- ◆ **Academic Failure** (items I179–I180)—children fail in school for many reasons, but research indicates that the very experience of failure, not necessarily linked to the student's ability, places him or her at higher risk.
- ◆ **Little Commitment to School** (items I181–I184)—when young people cease to see the role of the school as a viable one, they are at higher risk of engaging in the health risk behaviors under study.
- ◆ **Opportunities for Positive Involvement** (items I185–I186)—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** (items I187–I188)—as in both family and community domains, when young people are recognized and rewarded for their contributions, they are less likely to get involved in health risk behaviors.

In the peer/individual domain, the WSSAHB assessed eight risk factors and three protective factors:

- ◆ **Rebelliousness** (items I190–I192)—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** (items I193–I200)—whether it is alcohol, tobacco or other drug use or violent behavior, research clearly shows that the earlier an individual begins participating in this behavior, the more likely he or she is to develop problems with it in adolescence.
- ◆ **Antisocial Behavior** (items I201–I208)—young people who engage in generally antisocial behavior are at higher risk for engaging in health risk behaviors as well.
- ◆ **Attitudes Favorable Toward Antisocial Behavior** (items I209–I212)—when young people have accepting or condoning attitudes towards antisocial behavior, it is more likely they will engage in health risk behaviors.
- ◆ **Attitudes Favorable Toward Drug Use** (items I213–I216)—when young people have positive or accepting attitudes toward drug use in particular, it is more likely they will engage in a variety of health risk behaviors.
- ◆ **Interaction With Antisocial Peers** (items I217–I222)—young people who associate with peers who engage in health risk behaviors are far more likely to engage in them themselves.
- ◆ **Friends' Use of Drugs** (items I223–I226)—when their friends use drugs, it is far more likely that young people will engage in any of these health risk behaviors.
- ◆ **Sensation Seeking** (items I227–I229)—young people who seek out opportunities for dangerous risk behavior in general are at higher risk for participating in health risk behaviors as well.
- ◆ **Peer Rewards for Conventional Involvement** (items I230–I233)—as in all three other domains, when young people are rewarded in their peer group for positive involvement, it is less likely they will participate in health risk behaviors.
- ◆ **Belief in the Moral Order** (items I234–I237)—young people who generally prescribe to a belief in what is "right" or "wrong" are at lower risk for engaging in problem behaviors.

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- ♦ **Social Skills** (items I238–I241)—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 28 scales were constructed using standard Likert scaling practices. The response options of some items were recoded or reordered to provide a continuum from low to high appropriate for the scale. For risk scale items, a high value reflects an undesirable attitude or condition. For protective scale items, a high value reflects a desirable attitude or condition. The length and internal consistency reliabilities for all risk and protective factor scales in all four domains are shown in Exhibit 6-3

Missing data were handled by computing the average response to those items on the scale to which the student responded. A scale score was computed only if the student responded to a minimum of two thirds of the items on that scale. For most scales, 80–90 percent of the students answered all items.

**Exhibit 6-3**  
**Characteristics of Risk and Protective Factor Scales**

<i>Community Factors</i>					
Scale	Name	Type	Forms	# of Items	Alpha
Low Neighborhood Attachment	risk 11	Risk	B, D	3	0.85
Community Disorganization	risk 12	Risk	B, C	5	0.8
Transition and Mobility	risk 13	Risk	B, C	4	0.68
Laws and Norms Favorable to Drug Use	risk 14	Risk	B, D	6	0.74
Perceived Availability of Alcohol, Tobacco, Drugs, and Firearms	risk 15	Risk	all	5	0.85
Rewards for Conventional Involvement	risk 16	Protective	B	3	0.92

<i>Family Factors</i>					
Scale	Name	Type	Forms	# of Items	Alpha
Poor Family Management	risk 21	Risk	B, D	6	0.79
Poor Family Discipline	risk 22	Risk	B, D	3	0.76
History of Antisocial Behavior	risk 23	Risk	B, D	10	0.82
Parental Attitudes Favorable Toward Antisocial Behavior	risk 24	Risk	B, D	6	0.86
Low Family Attachment	risk 25	Risk	B, D	4	0.75
Opportunities for Positive Involvement	risk 26	Protective	B	3	0.79
Rewards for Conventional Involvement	risk 27	Protective	B	4	0.78

## Exhibit 6-3, continued

<i>School Factors</i>					
Scale	Name	Type	Forms	# of Items	Alpha
Academic Failure	risk 31	Risk	all	2	0.76
Little Commitment to School	risk 32	Risk	all	4	0.75
Opportunities for Positive Involvement	risk 33	Protective	B	2	0.62
Rewards for Conventional Involvement	risk 34	Protective	B	2	0.67

<i>Peer/Individual Factors</i>					
Scale	Name	Type	Forms	# of Items	Alpha
Rebelliousness	risk 41	Risk	B, C	3	0.83
Early Initiation of Problem Behavior	risk 42	Risk	B, D	8	0.82
Antisocial Behavior	risk 43	Risk	all	8	0.87
Attitudes Favorable Toward Antisocial Behavior	risk 44	Risk	B, D	4	0.84
Attitudes Favorable Toward Drug Use	risk 45	Risk	all	4	0.87
Interaction With Antisocial Peers	risk 46	Risk	B, D	6	0.76
Friends' Use of Drugs	risk 47	Risk	B, D	4	0.86
Sensation Seeking	risk 48	Risk	B	3	0.74
Peer Rewards for Conventional Involvement	risk 49	Protective	B	4	0.87
Belief in the Moral Order	risk 50	Protective	B, D	4	0.69
Social Skills	risk 51	Protective	all	4	0.58

## Relationships Among the Scales

Exhibit 6-4 details the correlations among the 28 risk and protective factor scales. The results grouped within triangles in this correlation matrix are correlations among factors within a single domain. The results grouped in rectangles in the matrix are correlations among factors in different domains. Similar to a multi-trait multi-method approach to validation, one would expect the intra-domain correlations to be higher than the inter-domain correlations. In reading this table, one should note that only those correlations with an absolute value of .2 or greater are presented. Correlations with an absolute value of less than .2 are simply indicated by their sign.

While there are many details of interest in this correlation matrix, the following highlights are presented as key findings:

- ◆ The correlations generally exceeded .2 in absolute value and range as high as .8 in magnitude.
- ◆ Within domain, the correlations were strongest for peer/individual factors (both in terms of their individual strengths and in terms of the number of strong correlations). Family factors had the next strongest correlations. Community factors showed the weakest correlations.
- ◆ Across domains, the strongest correlations were between family factors and peer/individual factors. The weakest correlations were among community factors and the other three domains.





## Relationship to Other Scales

Since the purpose for assessing risk and protective factors is to predict prevalence of other health risk behaviors, the relationships between the risk and protective factor scales with the health behavior scales is of particular importance. Exhibit 6-5 contains the correlations of each risk and protective factor with the alcohol use, drug use, violent behavior, and delinquent behavior scales.

Exhibit 6-5 details the correlations between the risk and protective factors with the alcohol use, drug use, violent behavior, and delinquent behavior scales. Within each risk/protective factor domain, correlations are shown for individual factors and the behavior scales. Like the those shown in the previous exhibit, there is a great deal that is of interest in this set of correlations. Highlights from the correlations among the risk and protective factors and the behavior scales include:

- ◆ The strongest correlations were clearly between the peer/individual factors and the behavior scales. In particular, strong correlations were seen between alcohol use, drug use, and delinquent behavior and the risk/protective factors of early initiation of problem behavior, attitudes favorable toward antisocial behavior, and friends' use of drugs.
- ◆ Family factors showed some modest correlations with behaviors; in particular, poor family discipline, history of antisocial behavior, and parental attitudes favorable toward antisocial behavior.
- ◆ Community factors also showed some modest correlations with behaviors; in particular, laws and norms favorable to drug use and perceived availability of alcohol, tobacco, drugs, and firearms.
- ◆ School factors generally showed fairly weak correlations with behaviors.

## Exhibit 6-5

## Correlation of Risk and Protective Factors With Other Scales

(- = correlations -.10 through -.19 + = correlations .10 through .19)

<i>Community Factors</i>				
Scale	Alcohol Use	Drug Use	Violent Behavior	Delinquent Behavior
Low Neighborhood Attachment	+	+	+	+
Community Disorganization	+	0.24	0.30	0.31
Transition and Mobility	+	+	+	0.22
Laws and Norms Favorable to Drug Use	0.42	0.42	0.30	0.34
Perceived Availability of Alcohol, Tobacco, Drugs, and Firearms	0.50	0.45	0.33	0.35
Rewards for Conventional Involvement	-0.65	-0.21	-	-

<i>Family Factors</i>				
Scale	Alcohol Use	Drug Use	Violent Behavior	Delinquent Behavior
Poor Family Management	0.37	0.38	0.22	0.30
Poor Family Discipline	0.49	0.43	0.27	0.31
History of Antisocial Behavior	0.54	0.57	0.34	0.45
Parental Attitudes Favorable Toward Antisocial Behavior	0.43	0.44	0.30	0.39
Low Family Attachment	0.27	0.26	+	0.22
Opportunities for Positive Involvement	-0.28	-0.26	-0.20	-0.23
Rewards for Conventional Involvement	-0.27	-0.27	-	-0.23

## Exhibit 6-5, continued

<i>School Factors</i>				
<b>Scale</b>	<b>Alcohol Use</b>	<b>Drug Use</b>	<b>Violent Behavior</b>	<b>Delinquent Behavior</b>
Academic Failure	0.26	0.30	0.25	0.33
Little Commitment to School	0.33	0.37	0.27	0.36
Opportunities for Positive Involvement	-	-	-	-
Rewards for Conventional Involvement	-	-0.22	-	-

<i>Peer/Individual Factors</i>				
<b>Scale</b>	<b>Alcohol Use</b>	<b>Drug Use</b>	<b>Violent Behavior</b>	<b>Delinquent Behavior</b>
Rebelliousness	0.45	0.44	0.40	0.41
Early Initiation of Problem Behavior	0.69	0.71	0.55	0.67
Antisocial Behavior	0.37	0.53	na	na
Attitudes Favorable Toward Drug Use	0.46	0.49	0.50	0.51
Attitudes Favorable Toward Antisocial Behavior	0.61	0.65	0.35	0.47
Interaction With Antisocial Peers	0.42	0.54	0.45	0.59
Friends' Use of Drugs	0.63	0.67	0.35	0.48
Sensation Seeking	0.46	0.44	0.40	0.39
Peer Rewards for Conventional Involvement	-0.23	-0.28	-0.25	-0.25
Belief in the Moral Order	-0.51	-0.49	-0.41	-0.43
Social Skills	-0.51	-0.54	-0.42	-0.47

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## **Appendix A. Item Cross-reference**





The table below provides a cross-reference identifying the item number of each item among the various forms of the survey. For the purposes of the analysis and reporting, items are organized around the original content domains used to construct the survey. The following naming conventions are observed in referring to an item:

- Ixxx Item number in record layout used for analysis and reporting
- Exxx Item number appearing on the Examination copy (December, 1994)
- Axxx Item number appearing on Form A
- Bxxx Item number appearing on Form B
- Cxxx Item number appearing on Form C
- Dxxx Item number appearing on Form D

A core of items appear in all four forms while most items appeared only on Form A or on Form B. Some items were eliminated for the sixth grade level of these two forms (Forms C and Form D respectively).

Record	Exam	Form A	Form B	Form C	Form D	Partial Item Text
001	001	001	001	001	001	How old are you?
002	002	002	002	002	002	What grade are you in?
003	003	003	003	003	003	Are you
004	004	004	004	004	004	What is your Zip Code?
005	005	005	005	005	005	How many adults 18 years
006	006	006	006	006	006	Not counting you, how many
007	007	007	007	007	007	What race do you consider
008	008	008	008	008	008	Do you consider yourself to
009	009	009	009	009	009	Which of the following
010	010	010	010			During the school year, how
011	011	096				How many extra school
012	012	011	011			How many different school
013	013	012	012	010	010	How many non-school
014	014	097		081		How many hours of sleep do
015	015	013	013			Did you ever drop out of
016	016	014	014	011	011	During the last 30 days, how
017	017	015	015			What is the highest degree or
018	018	016	016			What is the highest degree or
019	019	098				What is your current height,
020	020	099				What is your current weight
021	021	017	017			How do you think of
022	022	018	018			During ... to lose weight
023	023	019	019	012	012	During ... exercise
024	024	100		082		How many servings of fruits

Record	Exam	Form A	Form B	Form C	Form D	Partial Item Text
025	025	101		083		How many servings of dairy
026	026	102		084		In the last 30 days, have you
027	027	103		085		When did you last see a
028	028	104		086		When did you last see a
029	144	084	084	069	069	Are you absent from school
030	145	085	085	070	070	Do you often feel tired at
031	029	020	020	013	013	Smoking tobacco (cigarettes,
032	030	021	021	014	014	Smokeless tobacco (chew,
033	031	022	022	015	015	Alcohol (beer, wine, wine
034	032	023	023	016	016	Marijuana or hashish (grass,
035	033	024	024	017	017	Cocaine or crack (coke, rock,
036	034	025	025	018	018	Inhaled substances to get
037	035	026	026	019	019	Hallucinogens (angel dust,
038	036	027	027	020	020	Derbisol (wagon wheels,
039	037	028	028	021	021	Drugs you can get from the
040	038	029	029	022	022	Steroids (muscle builders)
041	039	030	030	023	023	Other drugs (amphetamines,
042	040	031	031	024	024	During the past 30 days,
043	041	032	032	025	025	Smokeless tobacco (chew,
044	042	033	033	026	026	Alcohol (beer, wine, wine
045	043	034	034	027	027	Marijuana or hashish (grass,
046	044	035	035	028	028	Cocaine or crack (coke, rock,
047	045	036	036	029	029	Inhalants (things you sniff to
048	046	037	037	030	030	Other illegal drugs (see items
049	047	105		087		If you drink alcohol, how
050	048	038	038	031	031	Think back over the last two
051	049	106		088		If you drink alcohol, how do
052	050	039	039	032	032	If you smoke, how do you
053	051	107		096		Have you ever used drugs
054	052	116				Did you use alcohol or other
055	053	117				Did you use more alcohol or
056	054	118				Did you often spend more
057	055	119				Did you try to give up
058	056	120				Did you often end up
059	057	121				Did you give up drinking or
060	058	122				Did drinking or using drugs
061	059	123				Did you spend a lot of time
062	060	124				Did it seem you could drink
063	061	125				Did you ever get sick or have
064	062	126				Did you often drink or use
065	063	127				Did you often have problems
066	064	128				Did you lose friends because
067	065	129				Did you get into fights after

Record	Exam	Form A	Form B	Form C	Form D	Partial Item Text
068	066	130				Did you often get sad,
069	067	131				Did you ever keep drinking
070	068	132				Would you often miss school
071	069	133				Did you give up doing things
072	070	134				Did your grades go down
073	071	135				Did you ever go to school or
074	072	136				Did you ever wake up the
075	073	137		097		Smoke marijuana
076	074	138		098		Try cocaine once or twice?
077	075	139		099		Have five or more drinks
078	076	140		100		Having five or more drinks
079	077	141		101		Smoking marijuana
080	078	142		102		Trying cocaine once or
081	079	143		103		Does your school provide a
082	080	144		104		If you had a question about
083	081	108		089		During the past 30 days, how
084	082	109				During the past 30 days, how
085	083	110		090		How often do you wear a seat
086	084	111		091		When you rode a bicycle
087	085	112		092		During the past 12 months,
088	086	040	040	033	033	During the past 30 days, how
089	087	041	041	034	034	Gun
090	088	042	042	035	035	Knife or razor
091	089	043	043	036	036	Club, stick, pipe or other
092	090	044	044	037	307	Gun
093	091	045	045	038	038	Knife or razor
094	092	046	046	039	039	Club, stick, pipe or other
095	093	113		093		When was the last time you
096	094	114		094		During the past 12 months, e
097	095	115		095		Whom did you fight with the
098	096	047	047	040	040	It is okay to physically hurt
099	097	048	048	041	041	Are you a member of a gang,
100	098	049	049			Have you ever been abused
101	099	050	050			Has anyone ever touched you
102	100	051	051			During the past 12 months,
103	101	052	052			During the past 12 months,
104	102	053	053			During the past 12 months,
105	103	054	054			If you attempted suicide
106	104	145				How many times have you
107	105	146		105		Have you been taught in
108	106	147				At what grade level do you
109	107	148				have unusual discharge
110	108	149				every six months even if

Record	Exam	Form A	Form B	Form C	Form D	Partial Item Text
111	109	150				every time they have a new
112	110	151				if a woman thinks she might
113	111	152				If you had a question about
114	112	153		106		What is the risk of getting
115	113	154				If you had a ... about HIV
116	114	095	095	080	080	How honestly have you
117	115		106		086	I'd like to get out of my
118	116		104		084	I like my neighborhood
119	117		105		085	If I had to move, I would
120	118		096	110		crime and/or drug selling
121	119		097	111		fights
122	120		098	112		lots of empty or abandoned
123	121		099	113		lots of graffiti
124	122		100	114		I feel safe in ... neighborhood
125	123		137	115		Have you changed homes in
126	124		138	116		How many times have you
127	125		150	117		Have you changed schools in
128	126	093	093	078	078	How many times have you
129	127		101		081	to use marijuana.
130	128		102		082	to drink alcohol.
131	129		103		083	to smoke cigarettes.
132	130	060	060	046	046	used marijuana, crack,
133	131	061	061	047	047	sold or dealt drugs?
134	132	062	062	048	048	done other things that could
135	133	063	063	049	049	gotten drunk or high?
136	134	092	092	077	077	drank some beer, wine or
137	135		107		087	smoked marijuana
138	136		108		088	carried a handgun
139	137	058	058	044	044	beer, wine or hard liquor (for
140	138	056	056	043	043	cigarettes
141	139	059	059	045	045	marijuana
142	140	057	057			drugs like cocaine, LSD, or
143	141	055	055	042	042	a handgun
144	187		109			My neighbors notice when I
145	188		110		089	There are people in my
146	189		111			There are people in my
147	210		177		132	My parents ask if I've gotten
148	211		180		135	My parents want me to call if
149	212		172		129	My parents would know if I
150	213		154		113	When I am not at home, one
151	214		153		112	The rules in my family are
152	215		156		115	My family has clear rules
153	216		155		114	If I drank some beer or wine

Record	Exam	Form A	Form B	Form C	Form D	Partial Item Text
154	217		151		110	If I skipped school I would
155	218		152		111	If I carried a handgun
156	219		158		117	drunk beer, wine or
157	220		159		118	smoked marijuana?
158	221		160		119	smoked cigarettes?
159	222		161		120	taken a handgun to school?
160	223		162		121	been suspended or expelled
161	224		157		116	Has anyone in your family
162	225		163		122	drink beer, wine or hard
163	226		164		123	smoke cigarettes?
164	227		165		124	smoke marijuana?
165	228		166		125	steal anything worth more
166	229		167		126	draw graffiti, or write things
167	230		168		127	pick a fight with someone?
168	231		176		131	Do you feel very close to
169	232		181			Do you enjoy spending time
170	233		178		133	Do you share your thoughts
171	234		179		134	Do you feel very close to
172	235		171			Do you enjoy spending time
173	236		182		136	Do you share your thoughts
174	237		175			My parents give me lots of
175	238		173		130	My parents ask me what I
176	239		174			If I had a personal problem, I
177	240		169		128	My parents notice when I am
178	241		170			How often do your parents '
179	142	094	094	079	079	Putting them all together,
180	143	091	091	076	076	Are your school grades better
181	146	086	086	071	071	I try hard to do good work in
182	147	087	087	072	072	It is important to me to get
183	148	088	088	073	073	I want very much to go to
184	149	089	089	074	074	I have given up on school.
185	190		146			In my school, students have
186	191		148			There are lots of chances for
187	192		149		109	My teacher(s) notices when I
188	193		147			The school lets my parents
189	194	090	090	075	075	I feel safe at my school
190	150		145	109		I do the opposite of what
191	151		143	107		I ignore rules that get in my
192	152		144	108		I like to see how much I can
193	153	076	076	061	061	smoked marijuana?
194	154	077	077	062	062	smoked a cigarette, even just
195	155	078	078	063	063	had more than a sip or two of
196	156	079	079	064	064	began drinking alcoholic

Record	Exam	Form A	Form B	Form C	Form D	Partial Item Text
197	157		112		090	got suspended from school?
198	158		113		091	got arrested?
199	159		114		092	carried a handgun?
200	160		115		093	attacked someone with the
201	161	075	075	060	060	been suspended from school?
202	162	068	068	054	054	carried a handgun?
203	163	069	069	055	055	sold illegal drugs?
204	164	070	070			stolen or tried to steal a
205	165	071	071	056	056	been arrested?
206	166	072	072	057	057	attacked someone with the
207	167	073	073	058	058	been drunk or high at school?
208	168	074	074	059	059	taken a handgun to school?
209	169		139		105	take a handgun to school?
210	170		140		106	steal anything worth more
211	171		141		107	pick a fight with someone?
212	172		142		108	attack someone with the idea
213	173	080	080	065	065	drink beer, wine or hard
214	174	081	081	066	066	smoke cigarettes?
215	175	082	082	067	067	smoke marijuana?
216	176	083	083	068	068	use LSD, cocaine,
217	177		116		094	been suspended from school?
218	178		117		095	carried a handgun?
219	179		118		096	sold illegal drugs?
220	180		119			stolen or tried to steal a
221	181		120		097	been arrested?
222	182		121			dropped out of school?
223	183		122		098	smoked cigarettes?
224	184		123		099	tried beer, wine or hard
225	185		124		100	used marijuana?
226	186		125			cocaine
227	203		134			Done what feels good no
228	204		135			Done something dangerous
229	205		136			Done crazy things even if
230	195		126			smoked cigarettes?
231	196		127			began drinking alcoholic
232	197		128			smoked marijuana?
233	198		129			carried a handgun?
234	199		131		102	I think it is okay to take
235	200		132		103	I think sometimes it's okay to
236	201		130		101	It is all right to beat up
237	202		133		104	It's important to be honest
238	206	064	064	050	050	You're looking at CD's in a
239	207	065	065	051	051	It's 8:00 on a weeknight and

<b>Record</b>	<b>Exam</b>	<b>Form A</b>	<b>Form B</b>	<b>Form C</b>	<b>Form D</b>	<b>Partial Item Text</b>
240	208	066	066	052	052	You are visiting another part
241	209	067	067	053	053	You are at a party at





## **Appendix B: HRRB Clearance Correspondence**





STATE OF WASHINGTON  
DEPARTMENT OF HEALTH

*Olympia, Washington 98504*

Human Research Review Board, MS: 45205

March 1, 1995

Roy M. Gabriel, Ph.D.  
RMC Research Corporation  
522 S.W. Fifth Ave., Suite 1407  
Portland, Oregon 97204

Re: DOH Project Application A-121994-H: "Washington State Survey of Adolescent Health Behaviors"

Dear Dr. Gabriel:

The Chair of DSHS/DOH Human Research Review Board A, Patricia Starzyk, and I have reviewed your response to the issues raised by the Board during the review of your proposal. Your response was satisfactory, and therefore we have approved your proposal. Maxine Hayes, Assistant Secretary, Community and Family Health, accepted the Board's approval recommendation and has extended final departmental administrative approval. Thus, you are free to proceed with your study as planned.

Approval of this project is valid for one year from the date of this letter. Any proposed changes in study purposes, design or methods are subject to prior review and approval by the Review Board. If the project is still ongoing at its anniversary date (March 1, 1996) you will be asked for a progress report for annual review and continuation approval. You are required to submit a final report at the conclusion of the project. Your file will remain active until we have received this report.

Good luck with your project!

Sincerely,

*Cindy Bouillon-Jensen*

Cindy Bouillon-Jensen  
Associate Executive Secretary  
Human Research Review Board

Administrative Approval:

*Maxine Hayes, M.D.*

Maxine Hayes, M.D.,  
Assistant Secretary  
Community and Family Health

cc: DSHS/DOH Human Research  
Review Board A



## **Appendix C: Materials Sent to Survey Coordinators**





RESEARCH CORPORATION

522 S.W. Fifth Avenue  
Suite 1407  
Portland, Oregon 97204

503-223-8248  
503-223-8399 FAX

**DATE:** February 17, 1995  
**TO:** Survey Coordinator  
**FROM:** Roy M. Gabriel, Ph.D., Project Director  
**RE:** Washington State Survey of Adolescent Health Behaviors

Thank you again for your interest in participating in the 1995 administration of the Washington State Survey of Adolescent Health Behaviors, and for your effort in helping to coordinate the administration in your local area. The information we gather from the survey, which is both voluntary and anonymous, will be critical in planning student services programs.

Please review carefully the information being sent to you at this time. If you have any questions about the materials, please call us no later than February 28, 1995. If you have any corrections to the enclosed *Participating School Information* form, please **mark those changes and fax it to us at (503) 223-8399.**

We are enclosing the following material to help inform parents about the survey:

1. *Sample letter* – you may use or adapt this letter to send to parents,
2. *Fact Sheet, Content Description and Rationale, and The Influence of "risk" and "protective" factors on adolescent behavior* – reference materials for preparing newsletter articles or for parent review. A copy of the full survey was sent to the district superintendent in December and may be available for review in a central place.

We are enclosing draft copies of the following material to help you coordinate with those who will administer the survey in their classrooms:

1. *Participating School Information* – summarizes the information we have in our database about your school's participation in the survey,
2. *Survey Administration Coordinator Guidelines* – your instructions for distributing, collecting, and returning survey materials,
3. *Survey Administration Instructions* – instructions for teachers who administer the survey in their classrooms, and
4. *If I Need Help* – a list of resource numbers available to students.

A Spanish language version of the survey is available. If you need a copy, which you may duplicate, please let us know right away. This can be noted on the "School Participation Form" and faxed to us at the number indicated above. Also, now is a good time to be deciding about what alternative activity will be provided for those students who elect not to participate in the survey. Some suggestions are provided in the enclosed "Survey Administration Coordinator Guidelines."

Again, many thanks for your interest and your help.



Washington State Survey of Adolescent Health Behaviors

School Packing List

District:

School:

Contact Person and Shipping Address for Survey Materials

Contact:

Title:

Agency:

Street:

City:

Phone: -

Participating Students

Grade	Funding	Classrooms	Form A&B	Form C&D	Total
09	Piggyback	1	52	0	52
10	Piggyback	1	35	0	35
12	Piggyback	1	30	0	30
TOTAL MATERIALS:		3	117	0	117

Supplemental Materials

Spanish copy: no

Special Instructions:

Financial Information (for piggyback grades only)

PO Number: 00009999

Contact: Judy Schoder

Title: Community and Family Health

Agency: Department of Health

Street: Bldg 7, Airdustrial Park

City: Olympia, WA

Phone: 206-586-1255

Zip: 98504-7880

NOTE - Please place this Packing List on top of the stack when you return the completed survey booklets.

**Sample Letter to Parents  
from School Principal or District Superintendent**

Dear \_\_\_\_\_ :

On March \_\_\_\_, the \_\_\_\_\_ grade students in our school are taking part in an extremely important survey jointly sponsored by the state Office of Superintendent of Public Instruction, the Department of Health and the Department of Social and Health Services here in Washington. The survey will assess a variety of health behaviors and related factors that are critically important to the well being of all of our young people. I have a copy of the survey in my office, and you may stop by and review it if you wish.

The survey is being conducted under contract by the Portland, Oregon office of RMC Research Corporation, a nationally known research and training firm. Dr. Roy Gabriel of RMC can be reached at (503) 223-8248 if, after reviewing the survey materials, you still have questions.

The survey is entirely anonymous. Students will not put their name on the survey booklet, and the results will be presented only in group summaries, like many opinion polls. These results will give us the information we need to plan important prevention and intervention programs to combat such problems as alcohol and other drug use and violence in our schools and communities. It will also help us judge the effectiveness of our current prevention and intervention efforts.

Your child's participation in the survey is voluntary, and you may decline to have him or her participate if you wish. If you do decline, your son or daughter will be allowed to read, or participate in some other alternative activity, while his or her classmates are taking the survey. If you do not decline, your son or daughter will still have the option of not answering any questions he or she finds objectionable.

Please let us know only if you do not wish your son or daughter to participate. Feel free to call me if you have any other questions about this important survey activity.

Sincerely,

\_\_\_\_\_  
Principal

(Phone) : \_\_\_\_\_

# WASHINGTON STATE SURVEY OF ADOLESCENT HEALTH BEHAVIORS

## FACT SHEET

In winter 1995, the Office of Superintendent of Public Instruction (OSPI), the Department of Health (DOH), and the Department of Social and Health Services' Division of Alcohol and Substance Abuse (DASA) will conduct a survey to measure the prevalence of health risk attitudes and behaviors among Washington's sixth, eighth, tenth, and twelfth grade students. This fact sheet answers important questions about the Washington State Survey of Adolescent Health Behaviors (WSSAHB).

**Q: What is the focus of the WSSAHB?**

A: The focus of the WSSAHB is on health risk behaviors — such as violence and alcohol, tobacco and other drug use — that can result in injury and/or impede positive development among our youth. The survey also includes risk and protective factors, which are attitudes and opinions that research has shown to be highly correlated with these health risk behaviors.

**Q: Why is the survey conducted?**

A: The purpose of the survey is to identify and monitor factors that affect the health of our state's youth. Since a similar survey has been conducted across the state every two years since 1988, its results can be used to monitor how these health behaviors increase, decrease or stay the same over time. They can also be used to identify important areas of need and plan effective programs of prevention both locally and statewide.

**Q: Do all Washington students take the WSSAHB?**

A: No, only a sample of students in Grades 6, 8, 10 and 12 take the survey. Schools are selected across the state to provide a scientifically accurate sample of the entire student population at these grades. In all, about 200 schools and 30,000 students will participate — just over 10 percent of the student population at these grade levels.

**Q: Does my school have to participate?**

A: Participation in the survey is voluntary. However, to obtain accurate estimates of these behaviors statewide and at regional and local levels, broad participation for all of the schools selected in the sample is needed.

**Q: Why should my school participate?**

A: Schools that are selected for the sample will receive a summary report of the results of all survey questions for their school, along with regional and statewide totals for comparison. This information, which is provided at no cost, is very useful in guiding the planning of prevention programs and fulfilling data requirements for community health and safety networks.

**Q: Can my school participate if it is not selected for the sample?**

A: Yes, there is an opportunity for additional schools to participate and receive the results of the survey, but at a nominal cost. Information on this procedure and its cost is available from your district superintendent and county health coordinator.

**Q: Are sensitive questions asked?**

A: Some questions on the WSSAHB may be considered sensitive by some schools or school districts. The survey includes questions related to alcohol, tobacco, and other drug use; AIDS and other sexually transmitted diseases; interpersonal violence; and other issues which significantly impact the positive development of young people. Unless questions in these topic areas are asked honestly and straightforwardly, we cannot know the degree to which Washington's youth engage in these health risk behaviors .

**Q: Is student participation anonymous? Is student privacy protected?**

A: Students are not asked for their names or identification numbers when they complete the survey. Survey administration procedures are designed to protect student privacy and maintain anonymity. When they finish the survey, students place their completed survey in a box or envelope with no personal identifiers. The box or envelope of completed surveys is then sealed and shipped to a contractor for optical scanning and analysis.

**Q: How is the survey coordinated at each school?**

Each participating school has a designated spokesperson, and each school district or ESD has a central coordinator for the survey effort. These spokespersons and coordinators have additional information on the survey, its administration instructions, and uses of the results.

**Q: Can I review the survey?**

Yes, a copy of the complete survey is available in the office of the district superintendent or his/her designee.

**Q: How long does it take to fill out the survey?**

One class period is needed to complete the survey. All questions are self-report, and no physical tests or exams are involved.

**Q: Do students answer the questions truthfully?**

Both national research and the experience here in Washington indicate that, when students are told of the importance of the information and that their responses are completely confidential, the data collected are extremely accurate. Internal reliability checks help identify any surveys which have obviously been answered carelessly, and these surveys are discarded from the sample. In addition, students always have the option of not answering questions to which they do not feel comfortable responding.

**Q: When is the survey conducted? When are results available?**

Data collection will begin in the March of 1995. Results will be provided to all participating schools by September of 1995.

**Q: How will this information be used?**

Information from the Washington State Survey of Adolescent Health Behaviors can be used to meet a variety of needs at the community and state levels.

- The survey provides information that participating schools can use to identify the importance of various problem behaviors at those schools. This information can be used as input for resource and policy decisions, such as targeting interventions. The schools can choose to share this information with other community organizations.
- Those items that were asked in previous years can be used to identify trends or changes in the patterns of behavior over time.
- The state-level data can be used to compare Washington results to other states that do similar surveys.
- At the state and federal levels, there are a variety of competing interests for limited resources. Results of this survey can be and have been used to provide evidence for the high priority of those issues that are revealed to be important.

# The 1995 Washington State Survey of Adolescent Health Behavior

## Rationale and Description of Survey Content

The 1995 Washington State Survey of Adolescent Health Behavior contains questions about a variety of high risk health behaviors. It is an expansion of two previous statewide survey efforts — the Student Alcohol and Other Drug Use Survey conducted by OSPI and the Centers for Disease Control and Prevention's Youth Risk Behavior Survey. State agency staff from the Office of Superintendent of Public Instruction (OSPI), the Department of Health (DOH), and the Department of Social and Health Services have collaborated on the content of the survey.

The content of the survey is broken down into seven major sections, each containing items designed to obtain specific information about these behaviors. This report specifies the importance and rationale for including each of these health behaviors on the survey and presents a few sample items from the survey relating to each behavior.

### Student Background Information

Some basic background information (e.g., age, grade level, ethnic group, etc.) is needed to ensure that the 30,000 students participating in the survey are generally representative of the statewide student population at these grades. In addition, it allows for examination of trends and differences in these behaviors among students of varying background characteristics. These analyses are conducted without specific identification of individual students, however, so that confidentiality can be maintained throughout the survey effort.

#### Sample Items:

*What grade are you in?*

*How old are you?*

*Which race do you consider yourself to be?*

### Nutrition and Physical Activity

An understanding and practice of healthy eating behaviors and physical exercise relates to students' commitment to taking good physical care of themselves — which is in opposition to the negative health behaviors contained in other sections of this survey.

#### Sample Items:

*Think about all the meals and snacks you ate yesterday. How many servings of vegetables (salad, corn, carrots, green beans, etc.) or fruit (glass of fruit juice, apple, orange, etc.) did you have yesterday?*

*During the past seven days how many times have you done at least 30 minutes of moderate exercise (for example, walking, bicycling, playing basketball, or jogging)?*

### **Alcohol, Tobacco, and Other Drug Use**

One of the target behaviors of interest in this survey is the extent to which students have used and are using alcohol, tobacco, and other drugs. Many of the same items that have been used in the 1988, 1990, and 1992 statewide surveys will again be employed here. Asking these questions again allows for both local and statewide assessments of the changes in these patterns of use over time for Washington's students and provides important data-based direction for prevention efforts both locally and across the state.

#### **Sample Items:**

*Have you ever, even once in your lifetime, used any of the following drugs?*

Substances included are:

- alcohol
- tobacco
- marijuana
- cocaine
- other drugs

*During the past 30 days, how many times have you used each of the following drugs?*

*Think back over the last two weeks. How many times have you had five or more drinks in a row?*

### **Prevention Activities**

Research has shown that the more students are involved in and committed to their education, including participation in positive, school-related activities, the less they tend to engage in health risk behavior. Information on the extent of this commitment and participation is needed on this survey to learn more about this relationship for students in Washington.

#### **Sample Items:**

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

*During the last 30 days have you skipped this class or been absent from school?*

*If you had a question about alcohol, tobacco, or other drugs, which one of the following would you most likely go to for information?*

## **Risk and Protective Factors**

Research has provided a great deal of guidance on attitudinal and behavioral factors that place students at great risk for violence and substance use, and those that, on the positive side, provide protection against these unhealthy behaviors. This survey contains several items that assess the degree to which these factors, both risk and protective, occur in the students who have responded to the survey. They relate to the students themselves, their peers, their families, their schools, and the communities in which they live. Again, these results highlight the important relationships that guide school prevention and intervention programs across the state.

### **Sample Items**

*How wrong do you think it is for someone your age to smoke marijuana?*

*What are the chances you would be seen as cool if you carried a handgun?*

*How old were you when you first smoked a cigarette, even a puff?*

*How often do your parents tell you they're proud of you for something you've done?*

## **Injury-Related Behaviors**

Reducing behaviors that result in injury, whether intentional or unintentional, is an important goal of state and local programs. The new federal goals for education include the assurance of "safe and drug-free schools" to promote student learning. This survey includes questions designed to determine the extent to which fighting or physically threatening behaviors occur, weapons are present, and the overall feeling of safety exists in the school building. It also includes questions dealing with other forms of injury-related behaviors such as attempted suicide and driving under the influence of alcohol.

### **Sample Items:**

*During the past 30 days, how many times have you carried a weapon, such as a gun, knife, or club for self-protection or because you thought you might need it in a fight?*

*During the past 12 months, how many times have you been in a physical fight in which you or the person you were fighting with were injured and had to be treated by a doctor or a nurse?*

*During the past 12 months, have you ever seriously thought about attempting suicide?*



## Sexual Behavior and HIV /AIDS Awareness

Nationally, HIV and other sexually transmitted diseases (STD) are occurring among our youth at a greater rate than ever before. Questions on this survey were drawn from the state health curriculum to determine whether students are aware of the ways that HIV/AIDS is transmitted, know how to avoid HIV infection and other STDs and know that engaging in certain behaviors could place them at risk. No questions about sexual practices or beliefs are included in the survey

### Sample Items:

*Have you been taught in school about methods to avoid infection with HIV/AIDS?*

*What is the risk of getting HIV/AIDS from injecting drugs with a needle that someone else has used?*

*If you had a question about pregnancy or birth control, to which of the following would you most likely go for information?*

# —REVISED—

## SURVEY ADMINISTRATION INSTRUCTIONS

### WASHINGTON STATE SURVEY OF ADOLESCENT HEALTH BEHAVIORS

#### Introduction

The Washington State Survey of Adolescent Health Behaviors is the product of a collaborative effort among the Office of Superintendent of Public Instruction, Department of Health, Department of Social and Health Service (Division of Alcohol and Substance Abuse and Office of Research and Data Analysis), Washington Institute for Public Policy, Social Development Research Group, and RMC Research Corporation. The current survey is the fourth generation of the student alcohol and drug use survey conducted in 1988 and repeated every two years since then. The current survey includes questions related to alcohol and other drugs, a variety of health risk behaviors, and risk and protective factors related to those behaviors. The information from this survey has been critical for planning and improving prevention and intervention programs at the school, district, and state levels. It has also been important for monitoring changes in student behaviors over time.

**Student participation is voluntary.** Any student may decline to participate, and those students who make this choice need to be provided with an alternative activity to be chosen by your school. Any student that chooses to participate may skip any question which he or she prefers not to answer. In addition, **all responses are completely anonymous.** No one will know the answers from any student.

#### Prior to the Survey Administration

**Materials.** Your survey coordinator will provide each teacher with the number of survey booklets required for his or her class. Administration instructions, an envelope (or box, depending on the number of surveys required for the classroom) and a classroom header sheet will also be provided. Make sure you have additional No. 2 pencils for students who may need them. If you do not have enough booklets, contact your building coordinator to obtain them.

#### Scheduling

Students will need one class period to answer the survey. All students in the participating grades in your school should receive the survey during the same class period, if possible. This will prevent distorted results caused by students discussing their answers with others who have not yet received the survey.

It is not expected that every student will answer every question on the survey. Students are expected to answer only as many questions as they can during the class period.

**Survey Forms.** Note the form printed in the lower right-hand corner of the survey cover. There are four forms of the survey:

Form A (red) and Form B (orange)	Grades 8 – 12
Form C (green) and Form D (blue)	Grades 6 – 7

Make sure you have the correct forms for your grade level. Forms A/B and Forms C/D were alternated for you when they were packed and shipped to you. **Each student will complete ONLY ONE survey booklet.**

There are no answer sheets. Students will mark their answers directly in the survey booklet.

### **Survey Administration**

Please read the instructions on the following page to the students. It is essential that you convey the importance of the survey for your school, the district, and the state in planning student service programs.

It is also essential that students know that their participation is voluntary and that their answers are anonymous. Therefore, you should follow all instructions as indicated in these guidelines. In addition, you should remain in your room (but seated at your desk) while students are completing the survey.

### **Alternative Activity**

Since student participation is completely voluntary, each building needs to choose an alternative activity to provide to those students who decide not to participate. These students will be involved in this activity during the time the survey is being administered.

### **Return of Surveys and Unused Booklets.**

When all students have completed the survey, pass an empty envelope (or box) around the classroom. Each student will put his/her own completed booklet into it.

Complete the class header sheet and place it on top of the booklets in the envelope or box. Only used booklets go into the envelope or box. Return the envelope or box of used booklets and any unused booklets to the survey coordinator who will return the materials to RMC Research Corporation.

## ADMINISTRATION INSTRUCTIONS

Say to the class:

*Today we will be completing the Washington State Survey of Adolescent Health Behaviors. This survey is completely voluntary and anonymous. If you prefer not to participate in the survey, you may participate in \_\_\_\_\_ (alternative activity) instead. Would anyone who prefers to \_\_\_\_\_ (participate in the alternative activity) please \_\_\_\_\_ (direct them to the activity) now.*

Hand out the survey booklets and No. 2 pencils. Then say:

*Please do not open the survey booklet or make any marks on the materials until I tell you to do so. If your pencil breaks during the survey, quietly pick up another one from my desk.*

Pause

*The purpose of this survey is to learn about what students in our school think about a variety of health behaviors. Your answers will help us understand the behaviors and needs of students in our school. We are very interested in what you have to say and appreciate your honest answers. You should answer questions accurately and honestly.*

*Your participation is voluntary. If there is any question that would upset you or your parents, just leave it blank.*

*Make sure that you have a survey booklet and a No. 2 pencil. Mark your answers directly in the survey booklet.*

*Remember to fill in the circle completely. Erase your answer completely if you wish to change it. Use a No. 2 pencil only. Do NOT use a pen.*

*This is not a test, and there are no right or wrong answers. Choose the answer that is right for you. You are not expected to answer every question on the survey, but answer as many as you can.*

*When all of you have finished the survey, I will pass around an envelope (or box) to collect your survey booklet. \_\_\_\_\_ (name of designated student) will close the envelope (or box) and return it to me. If you finish before others, please work quietly until all have finished.*

When all students have finished, have a designated student pass around the envelope (or box) to collect the survey booklets. Complete the classroom header sheet and place it on top of the booklets. Then return the box and any unused booklets to the survey coordinator.

## SURVEY ADMINISTRATION COORDINATOR GUIDELINES

### WASHINGTON STATE SURVEY OF ADOLESCENT HEALTH BEHAVIORS

#### Before the Survey

1. **Announce the survey.** Some public notification of the survey is highly recommended. This could be accomplished through parent letters, school newsletters, or news releases. Enclosed you will find the following materials that may be of help to you in this regard: a sample parent letter, fact sheet, and content description and rationale. **A sample copy of the survey should be placed in the district office for review by interested parents.**
2. **Select a date.** Choose the day **between March 15 and March 31** that is best for you to administer the survey. The administration should be scheduled for a single period of one day throughout the school. This prevents students from talking about their answers with classmates who have not yet taken the survey.
3. **Prepare materials.** Divide the materials for distribution to each classroom. Each student in the class at the selected grade level should receive a survey booklet. No answer sheets need to be distributed — students will mark their answers directly in the booklet. In addition to the survey booklets, each classroom should have a copy of:
  - a. The administration instructions (enclosed).
  - b. A classroom header sheet (enclosed).
  - c. An envelope (or box) for the completed answer booklets.
  - d. Copies of the *Resource List* (enclosed).

Enough copies of the enclosed resource list should be available in each classroom for students to take one if they wish. Space is available on the list for you to add local resource numbers (these local numbers may be found, for example, through the district office, school counselor, drug-free schools coordinator, county prevention coordinator, county health coordinator, etc.).

There are four forms of the survey:

Form A (red) and Form B (orange)	Grades 8–12
Form C (green) and Form D (blue)	Grades 6–7

Forms A and B and Forms C and D were alternated for you when they were packed and shipped to you. The last page of Form B and the second to last page of Form D are perforated. These pages may be torn from the booklets should the district or school elect not to administer those items.

4. **Train teachers.** Meet briefly with the teachers who will be administering the survey to discuss the purpose and administration procedures for the survey. They should also take a few minutes to review the administration instructions. Participation in the survey is **voluntary**, and it is important that students do not feel coerced to participate. Therefore,

students need to be provided with an alternative activity if they choose not to participate. At this time there should be a decision about what alternative activity will be provided and whether or not these students will remain in the same room or be asked to move to another room. Each building has the freedom to decide what alternative activity to provide (for example, free reading time, assigned supplemental reading, a library assignment if arranged in coordination with the school librarian, or another appropriate activity).

### **The Day of Administration**

6. **Distribute materials.** Distribute the survey materials to each classroom. Also include some No. 2 pencils for students who may not have them.
7. **Collect materials.** Collect the envelopes (or boxes) containing the used booklets, administration instructions, and any unused booklets. Be sure to keep the materials from each room separate from each other, and be sure there is a completed class header sheet (number of students enrolled, absent, choosing not to participate, etc.) on top.
8. **Package materials.** Package all the materials in a sturdy shipping carton: (a) first place the unused booklets in the bottom of the carton, (b) then stack the envelopes or boxes flat in the carton. Add packing material to the remaining space in the carton to protect the envelopes. If the survey booklets are loose, stack them face up with the class header sheet on top of each class. (c) Place the packing list on top of the stack.
9. **Return materials.** Attach the enclosed shipping labels to the carton. If you have more than one carton, mark each carton as "1 of 3," "2 of 3," "3 of 3," etc. **Materials need to be mailed no later than March 31.** In case the label is lost, ship the materials to:

Dr. Dennis Deck  
Senior Research Associate  
RMC Research Corporation  
522 SW 5th, Suite 1407  
Portland, OR 97204

## IF I NEED SOME HELP

The Office of Superintendent of Public Instruction (OSPI), Department of Health (DOH) and Department of Social and Health Services (DSHS) appreciate your participation in today's survey. The information you provide is anonymous, and will be used only to gain insight into the health behavior trends of young people so that we can better understand how to meet **your** needs.

If today's survey causes you to have questions or feelings about which you would like to seek help, we recommend that you do one or more of the following as soon as possible:

- Contact a trusted adult in your school, such as a teacher, counselor, nurse, intervention specialist, or principal.
- Talk other trusted adults in your family or community, such as your parents or religious leader.
- Call one or more of the following numbers for information on where to seek further help.

24 Hour Crisis Line	(800) 621-6040 or (206) 461-3222 in King County
A Friend Care Crisis Line	(206) 258-HELP
Alcohol/Drug 24 Hour Help Line (Teen Line)	(800) 562-1240 or (206) 722-4222 or (206) 722-3700 in Greater Seattle area
Alcohol Hotline	(206) 252-6465
Washington State HIV/AIDS Hotline	(800) 272-AIDS
Washington State Suicide Prevention Line	(800) 422-2552
Domestic Violence Hotline	(800) 562-6025
Information and Referral Service	(800) 752-9422
Washington State Substance Abuse Coalition	(800) 662-9111
County Prevention Specialists (via WSSAC)	(206) 634-7011
National Association for Native American COA	(206) 467-7686
Options for Pregnancy (Adoption)	(800) 732-1887
Boy's Town (Alcohol and Other Drugs)	(800) 448-3000
Cocaine Anonymous	(800) 662-2463
Rape/ Sexual Assault (YWCA)	(800) 695-0167
Office of Superintendent of Public Instruction	(360) 753-5595
Division of Alcohol and Substance Abuse	(360) 438-8200
Department of Health	(206) 586-7424
(Can also give you the number for your County Health Office)	

