

Oregon Healthy Teens 2006 Methodology

Introduction

The Oregon Healthy Teens Survey (OHT) is the one state-sponsored survey designed to monitor the health and well being of adolescents. This survey reflects the information needs of state agencies and local groups as well as the National Cancer Institute (NCI) funded statewide tobacco prevention evaluation study. An anonymous and voluntary research-based survey, the OHT is designed and administered through a collaborative group of Oregon state agencies including the Department of Human Services, the Department of Education, the Governor's Commission on Juvenile Justice, the Commission on Children and Families, the Oregon Progress Board and the Oregon Research Institute. State and local agencies depend on OHT to assess youth needs, develop comprehensive plans and prevention programs, solicit funding and measure outcomes.

These were the operational goals for the 2006 Oregon Healthy Teens (OHT) survey:

- Ensure voluntary and confidential participation for students, with parental notification;
- Provide a single statewide survey framework encompassing topics of risk behavior and influences on youth behavior for a comprehensive look at youth well-being;
- Draw a random sample of schools across the to maximize the ability to provide statistically accurate county-level data reporting for the 2005/2006 two-year period; and
- Allow as many Oregon public high schools and middle schools as possible the opportunity to participate, ensuring our ability to provide localized reports to schools and counties.

If you have any questions please contact the Center for Health Statistics 971-673-1145 and ask for the Survey Unit Coordinator, the manager of the Health Statistics Unit or the OHT Research Analyst.

Study Design

Initial Process and Instrument Development

Participation in the OHT was voluntary at every level. District school superintendents were initially contacted late in the winter of 2005 to invite their participation and to request permission to contact their school principals. If district approval was obtained, the school's principal was contacted to obtain approval and the name of a school contact for the survey. Schools and districts received a draft copy of the 2006 questionnaire.

The survey instruments have been revised annually since 1991, and the current focus areas include:

- Tobacco, alcohol and other drug use and access to substances;
- Protective factors and assets such as parental support and neighborhood characteristics;
- Physical exercise, nutrition and body weight;
- Sexual risk behaviors;
- Mental health concerns such as suicidal ideation, depression and harassment;
- Intentional and unintentional injury, including violence and vehicle safety;
- Health conditions and health care access; and
- Basic demographics.

This year's surveys consisted of one version for 8th and one version for 11th graders, containing approximately 225 separate response items. The only difference between the two versions was the exclusion of two questions on the 8th grade survey relating to sexual identity. The survey form is available on the OHT page at <http://www.dhs.state.or.us/dhs/ph/chs/youthsurvey/ohteens/2006/oht2006eng.pdf>

Survey Administration

The Oregon Department of Human Services (DHS) contracted with a private agency, NPC Research (Northwest Professional Consortium, Inc.), to perform the actual survey scheduling, data collection and initial data processing.

The OHT survey uses an active notification, passive consent permission model. At least two weeks prior to the scheduled survey date, participating schools sent parents/guardians a letter notifying them about the survey and asking permission for their child to fill out the questionnaire. Copies of the survey were available at the school and on the Internet for parents and others who wished to have more information about survey content. Parents/guardians were asked to contact the school by mail or phone if they wished to **refuse** consent. Parents could also tell their children not to take the survey and students could also opt out of the survey on their own, even if their parents had not explicitly asked them to be excluded.

NPC Research staff provided instructions and technical consultation to the school personnel in each building who coordinated the survey. The surveys were generally administered in the classrooms, and students who did not participate were provided with an alternative activity outside the classroom.

Student Confidentiality and Privacy

School staff that administered the survey were required to read and sign confidentiality forms. Students were informed that the survey was anonymous and that they could choose whether to participate and that if they did participate, they could skip any question they did not want to answer. Students completed the questionnaires (which contained no personal identifiers) that were then placed in an envelope. The last student to complete the survey within a classroom was asked to close and seal the envelope and write their classroom across the seal.

Only aggregated reports were sent to the schools and districts participating, ensuring student confidentiality. (See reporting for further report dissemination details.) These reports were

broken down by grade and gender. Schools with fewer than 10 males and 10 females in the school's valid sample received an aggregate report not broken out by gender. A minimum sample size of 10 was required for the school to receive an aggregate report.

Sampling

The study target population is all Oregon 8th and 11th grade students. There were four ways schools could enter into the survey:

1. As part of a statewide random sample;
2. As a Coordinated School Health (CSH) school;
3. As part of an Oregon Research Institute (ORI) Prevention study; and/or
4. As a volunteer school.

As noted in the introduction, the sampling strategy was to obtain a representative statewide sample. A simple random sample was used to select 32 high schools for the 11th grade and 40 associated feeder middle schools.

The final sample totaled 103 high schools, 133 middle schools, and 25 schools with both 8th and 11th graders; for a total of 261 participating schools. Surveys were returned from 28,986 students, representing an overall response rate of 81.2% of those sampled. Of this total, 3.0% were excluded because of extensive patterns of discrepant and/or dubious (extreme) answers, and 5.8% were excluded because their grade level could not be determined or because of missing gender information (see the response validity section below for more information on this process). This left 26,440 valid surveys (91.2% of the total received), with 15,291 from 8th grade and 10,676 from 11th grade in 32 counties. There was no data collected at all from Jefferson, Josephine, Lincoln and Wallowa counties. Yamhill county had no 8th grade data.

Response Validity and Data Editing

Initial Data Processing

The surveys were optically scanned by NPC Research. This process created raw data files (one for 8th grade and one for 11th grade) containing the responses for each survey received, identified only by the imprinted survey number, which cannot be associated with any particular student. Further processing added school, district, county and other demographic information, and NPC Research combined all of these into a single SPSS data file combining the results for all the surveys. If a particular survey contained no grade information an attempt was made to impute the true grade based on their age. This improved the number of usable surveys but there were still 1,668 (5.8%) surveys where grade or gender information was missing and could not be imputed. A table at the end of the next section will summarize these factors, as well as additional data editing based on the following validity testing.

Do Oregon Teens Tell The Truth?

Studies indicate that most young people are truthful in answering anonymous health surveys. Most of the Oregon Healthy Teens survey questions come from studies that have demonstrated good test-retest reliability in prior research¹. While a small number of participants did misrepresent their true behavior, the most egregious examples are not included in these data. Specific database processing language was created to verify the validity of responses, including checking for inconsistent and/or dubious answers.

Inconsistencies include things like reporting having smoked cigarettes in the past 30 days, yet reporting never having smoked when asked age of first use. If a survey showed a relatively large number of inconsistencies, the entire survey was marked as invalid. The threshold for this invalidation was 10% or more of the total possible inconsistencies in the survey. If total inconsistencies were less than 10%, the discrepant items were resolved by setting to missing the responses for the inconsistent questions. In general, the first item of the related set was used as the standard, i.e., no change was made to the answer in the standard, or key indicator. Then if the student had inconsistent answers in related questions, and their survey was still within the 10% overall validity threshold, the inconsistent answers in the set of related questions were changed to missing.

Dubious responses are excessive risk behaviors reported by a student. While it could be expected that the highest risk students would report multiple risk behaviors, it is also possible to weed out students who did not take the survey seriously by looking at how many extreme answers in a row were chosen. This dubious response analysis grouped items within topic areas:

- Alcohol, tobacco and other drug use and access;
- Sexual risk behavior;
- Physical activity and nutrition;
- Safety and injury related behaviors; and
- Mental and physical health.

Variables were created to count outlier answers within these topic areas. In a similar fashion to how inconsistent responses were processed, if there were sufficiently large numbers of dubious responses, the entire survey was marked as invalid. The threshold for invalidating the survey for this reason was 20% or more of the total possible dubious responses. If a survey had less than 20% dubious responses overall, but a particular series of questions showed dubious responses, the data for that series of questions was marked as missing.

¹ Brener ND, Collins JL, Kann L, Warren CW, Williams BI. Reliability of the Youth Risk Behavior Survey questionnaire. American Journal of Epidemiology, 1995; 141:575-80.

Of the 28,986 surveys from participating 8th and 11th graders, 878 (3.0%) were excluded based on validity criteria relating to inconsistent and/or dubious response patterns. A total of 86 (0.3%) were excluded based on both inconsistent and dubious responses. An additional 1,668 (5.8%) were excluded solely for missing grade or gender information, leaving 26,440 valid surveys, or 92.1% of all received. The following table summarizes the number of records eliminated by the various editing criteria:

	Unknown Grade		Other Grade		8 th Grade		11 th Grade		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%
Eliminated by:										
Either inconsistent or dubious criteria	158	8.9%	14	2.9%	387	2.5%	233	2.1%	792	2.7%
Both inconsistent and dubious criteria	30	1.7%	1	0.2%	23	0.1%	32	0.3%	86	0.3%
Missing gender or unknown grade	1,592	89.4%	0	0.0%	47	0.3%	29	0.3%	1,668	5.8%
Total Eliminated Surveys*	1,780	100.0%	15	3.1%	457	2.9%	294	2.8%	2,546	8.8%
Total Usable Surveys*	0	0.0%	473	96.9%	15,291	97.1%	10,676	97.3%	26,440	91.2%
Total Received**	1,780	6.1%	488	1.7%	15,748	54.3%	10,970	37.8%	28,986	100.0%

*Percentages are based on the total number of surveys received within that grade level.

**Percentages are based on the total number of surveys received overall.

Weighting

The surveys from schools that were part of the statewide random sample (3,615 8th graders, 2,602 11th graders) are weighted, based on various factors. Because the sampling design selected high schools at random, the weighting value is to make the sample representative of the state. Schools that are not part of the random sample (ORI program only evaluation schools, Coordinated School Health only schools and volunteer schools) had their information reported to their districts but are not weighted and are not included in the DHS state reports.

In order to calculate the final weight values, three factors were considered – the base weight for the probability of a particular student being selected, an adjustment for student and school response rates, and a final adjustment for incomplete coverage. All school enrollment figures are based on Oregon Department of Education enrollment data.

Base Weight. OHT-sampled high schools were sampled proportional to their size and therefore are self-weighting with respect to enrollment. The base weight was a constant and was equal to the reciprocal of the ratio of the number of students selected per grade to the number enrolled.

Response Adjustment. Not all selected schools and/or students participated, therefore the base weights need to be adjusted to reflect the actual participation. These response adjustments were calculated in two parts, using the reciprocal of: 1) The ratio of the number of participating schools to the number selected (school non-response); and 2) The ratio of the number of participating students per school-grade to the number enrolled (student non-response).

County Coverage Adjustment. Because not all counties participated, a final adjustment was necessary to accurately reflect the statewide population. This was done by calculating a post stratification adjustment as the ratio of total number enrolled per grade in the state to the total grade enrollment of the selected sample.

Final weight. The final weights are the product of base weights, the response adjustments and, for the statewide weight, the county coverage adjustment. The final weights yield state population totals per grade.

The published reports include weighted percentages for prevalence estimates, but also include unweighted counts so readers know how many surveys make up each response. Because of the weighting, any percentage recalculation based on the unweighted counts may differ slightly from the published percentages. The published percentages accurately represent state prevalence with a maximum margin of error (95% confidence interval) of approximately $\pm 0.8\%$ for the 8th grade and $\pm 0.9\%$ for the 11th grade. The maximum margin of error occurs with prevalence estimates at or near the 50% level. The exact margin of error for each question is smaller and varies, depending on the percentage estimated for that particular question.

Reporting

Schools

Summary and detailed reports were sent to each participating school and district, and these reports are available from the school district. The summary reports included key indicators around tobacco, alcohol and other drug attitudes and use, school safety, mental health, sexual activity and health-promoting behaviors and these were sent directly to the schools by the DHS contractor. Detailed reports for each school and district, containing counts and percentages for every survey item, were also prepared. These reports were burned onto CDs and also sent to each school and district.

Because individual schools may have small enrollments, caution should be used when interpreting percentages based on a small number of respondents. Further, the schools were not selected to provide a reliable estimate for the district so caution should be used combining school data within a district. No personally identifiable information is available because the survey was anonymous. To further protect confidentiality, reports were not broken down by gender if there were fewer than 10 males and 10 females in the school's valid sample.

DHS State and County Reports

OHT statewide results are available on the OHT website at:

<http://www.dhs.state.or.us/dhs/ph/chs/youthsurvey/ohtdata.shtml#2006>. Tabulations for the combined 2005/2006 county-level estimates are also available at:

<http://www.dhs.state.or.us/dhs/ph/chs/youthsurvey/ohteens/2006/county/index.shtml>.