Methods

Introduction

In 2011, the NSW Ministry of Health conducted the fourth New South Wales School Students Health Behaviours (SSHB) Survey. Previous SSHB surveys were conducted in 2002, 2005 and 2008, as part of the triennial Australian School Students Alcohol and Drugs (ASSAD) Survey, which began in 1984. This section describes the methods of data collection and analysis.

Sample selection

The target population was all students in Years 7-12 enrolled during the period February to December 2011 in New South Wales. Schools with fewer than 100 students were not included in the survey. Language schools were also excluded from the sampling frame.

The survey used a 2-stage probability sampling procedure: schools were selected first; students within schools were selected second. Schools were stratified by the 3 sectors (Government, Catholic, and Independent) and randomly selected within each sector. The sampling procedure ensured the distribution of schools among the 3 sectors was reflected in the sample. Two samples were drawn: junior secondary (Year 7 to Year 10); and senior secondary (Years 11 and 12).

The target school sample was 126 secondary schools. To try and achieve this target, 225 schools were approached and 115 schools agreed to participate, giving an overall school response rate of 51.1 per cent. The survey was conducted in the second half of the 2011 academic year.

Table 1: Acceptances by sample type, school type, and student year, New South Wales 2011

Acceptances School Type & Year Level	Total number of acceptances	Total number of schools approached	Accepted %
Catholic			
7-10	13	27	48%
11-12	5	17	29%
Total Catholic Schools	18	44	41%
Government			
7-10	50	84	60%
11-12	28	50	56%
Total Government Schools	78	134	58%
Independent			
7-10	11	25	44%
11-12	8	22	36%
Total Independent Schools	19	47	40%
Total			
Total Secondary Schools	115	225	51.1%

Survey procedure

The questionnaire and survey procedures were approved by the Human Research Ethics Committees of the Cancer Council Victoria, the NSW Population and Health Research Ethics Committee, and the NSW Department of Education and Communities. The survey was also endorsed by the Catholic Education Commission and the Association of Independent Schools of New South Wales.

Principals of selected schools were contacted by the NSW Ministry of Health's Centre for Epidemiology and Evidence to obtain permission to conduct the survey at their schools. If a school refused, they were replaced by the school nearest to them within the same sector. The aim was to survey 80 students from each participating school. For junior secondary, 1 class of 20 students (and 20 replacements) were randomly selected from each of Years 7-10; for senior secondary, 2 classes of 20 students (or 40 students and 40 replacements) were randomly selected from each of Years 11-12. A brochure and consent form was sent to the parents of each selected student and replacement. Consent forms were returned to the school and the school held the list of students who had parental consent. Written consent was sought from students with parental consent before the survey.

McNair Ingenuity Research Pty Ltd was contracted to administer the pencil-and-paper questionnaire on the school premises. If a student from the sample list was not present at the time of the survey, a student from the replacement list for that year was surveyed. Students from different years were surveyed together. Students answered the questionnaire anonymously.

Survey instrument

The survey instrument was a written self-completion questionnaire, which included questions on alcohol, demographics, height and weight (including perception of body mass), injury, nutrition, physical activity, psychological distress, sedentary behaviour, substance use, sun protection (including sunburn experience and solarium use), and tobacco. Refer to the end of this report for a copy of the questionnaire.

Coding and data entry

Responses were coded and the data entered onto a database by the Centre for Behavioural Research in Cancer at The Cancer Council Victoria. After data entry, the data were cleaned and prepared for data analysis. Students whose questionnaires had a large amount of missing data or whose responses were extreme were removed from the dataset before analyses started. In the analysis, responses were excluded if the respondent gave contradictory or multiple responses or did not answer the question. However, these respondents remained in the analysis for the questions that they had validly completed. Cleaning of data relating to questions about the use of alcohol, tobacco, or other substances involved checking for inconsistencies in reported use across time periods (lifetime, year, month, and week). This cleaning procedure ensured maximum use of data and operated on the principle that the students response about personal use in the most recent time period was accurate.

Data analyses and reporting

School students aged 12-17 years were included in the analysis. To ensure that disproportionate sampling of any school type, age level, and gender grouping, did not bias the prevalence estimates, data were weighted to bring the achieved sample into line with the population distribution. In this report, prevalence estimates are based on these weighted data. Information about the enrolment details of male and female students in each age group at Government, Catholic and Independent schools was obtained from the Australian Bureau of Statistics.[1]

Data were analysed using SAS version 9.2.[2] The SURVEYFREQ procedure in SAS was used to analyse the data and calculate point estimates and 95 per cent confidence intervals for the estimates. The SURVEYFREQ procedure calculates standard errors adjusted for the design effect factor or DEFF (the variance for a non-random sample divided by the variance for a simple random sample). It uses the Taylor expansion method to estimate sampling errors of estimators based on the stratified random sample.[2] Estimates are presented for each response or indicator and by age group, sex, Local Health District (LHD) and year where possible. Although figures are provided in every instance in the tables (in the HTML version) if the estimates are not reliable because of small sample sizes (relative standard errors greater than 25%) the estimate is marked with an asterisk in the table and n/a is shown in the graph. Where possible, indicators have been aligned with those collected previously, so that trends can be examined. Analysis of change over time is compared across two time periods, between the base survey year and current survey year, and between the previous survey year and the current survey year. The base survey year for particular indicators may vary, as the survey instrument has changed over time.

The 95 per cent confidence interval provides a range of values that should contain the actual value 95 per cent of the time. In general, a wider confidence interval reflects less certainty in the estimate for that indicator. The width of the confidence interval relates to the differing sample size for each indicator. A wider confidence interval reflects less certainty in the estimate. If confidence intervals do not overlap then the observed estimates are significantly different. If confidence intervals overlap slightly the observed estimates may be significantly different but further testing needs to be done to establish that significance. For a pairwise comparison of subgroup estimates, the p value for a two-tailed test was calculated using the t-test for differences in means from independent samples and a modified form of t-test, which accounts for the dependence of the estimates, to test for differences between sub-group estimates and total estimates.[3]

The Local Health District (LHD) was derived from the student's residential postcode. Although not possible to report for each LHD because of unequal sampling, it was however possible to report on LHDs if some were grouped (ie Central Coast and Northern Sydney; South Eastern Sydney, Sydney and Illawarra Shoalhaven; Western Sydney and Nepean Blue Mountains; Mid North Coast and Northern NSW; Murrumbidgee and Southern NSW; and Western NSW and Far West). In this report, the term metropolitan means students who

lived in 1 of the 8 geographical LHDs designated greater metropolitan: Central Coast, Illawarra Shoalhaven, Nepean Blue Mountains, Northern Sydney, South Eastern Sydney, South Western Sydney, Sydney, and Western Sydney. The term rural-regional means students who lived in 1 of the 7 geographical LHDs designated rural or regional: Far West, Hunter New England, Mid North Coast, Murrumbidgee, Northern NSW, Southern NSW, and Western NSW.

Characteristics of final sample

A total of 8,179 students in Years 7-12 were surveyed during the second half of the 2011 academic year, 7,966 of whom were aged 12 to 17 years. Two thirds (66.6 per cent) were from Government schools, 20.0 per cent were from Catholic schools, and 13.4 per cent were from Independent schools. The final sample's sex distribution was 43.7 per cent male and 56.3 per cent female and the age distribution was 60.5 per cent aged 12 to 15 years and 39.5 per cent were aged 16-17 years. When the sample were weighted to the secondary school student population in NSW by age and sex, 50.8 per cent were male and 49.2 per cent were female, 70.4 per cent were aged 12-15 years and 29.6 per cent were aged 16-17 years.[1]

The sample also consisted of 4.4 per cent Aboriginal or Torres Strait Islander students (similar to the national distribution of Aboriginal or Torres Strait Islander students in 2011 of 5.0 per cent).[1] The main language spoken at home in the final sample were English (74.1 per cent), followed by English and another language (21.8 per cent), and another language only (3.9 per cent). Among respondents who spoke a language other than English at home, the most common languages were: Chinese languages (28.3 per cent), Arabic languages (17.3 per cent), Indian languages (11.7 per cent) and Vietnamese (5.1 per cent).

References

1. Australian Bureau of Statistics. *Schools Australia 2008*. Catalogue no. 4221.0. Canberra: ABS, 2006.
2. SAS Institute. The SAS System for Windows version 9.2. Cary, NC: SAS Institute Inc., 2009. Further information available from www.sas.com.
3. NSW Population Health Surveys Technical Paper: Method for pairwise comparison of subgroup estimates Technical paper http://www0.health.nsw.gov.au/publichealth/surveys/otherpub.asp
4. Australian Bureau of Statistics. Census of Population and Housing: Socio-Economic Indexes for Areas, Australia 2001. Catalogue no. 2039.0. Canberra: ABS, 2003.