2014 Youth Insights Survey

Methodology Report

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AUTHOR

This report was prepared by Joanna White and Pimsupa Puthipiroj, Research and Evaluation Unit, Health Promotion Agency. The report has been updated for the 2014 Youth Insights Survey based on the 2012 methodology report, and all previous versions are acknowledged.

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Thank you to all the school staff and students who participated in the 2014 Youth Insights Survey (YIS). We are indebted to them for their time and contribution to building our understanding of New Zealand young people's knowledge, attitudes, and behaviours around smoking and tobacco and their lifestyles in general.

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The YIS design was based on the Global Youth Tobacco Survey (GYTS), with input from the Centers for Disease Control and Prevention (CDC) Global Tobacco Surveillance System team.

Key Health Promotion Agency (HPA) staff involved in running and analysing the 2014 YIS were Joanna White and Danny Tu. Thank you also to other HPA staff who contributed to the survey, and especially to Kate Holland for her peer review of this report.

The YIS is one survey under the New Zealand Youth Tobacco Monitor (NZYTM) that is run in collaboration with Action on Smoking and Health (ASH). Thank you particularly to Stephanie Erick and Deidre Patchett at ASH for their contributions.

HPA administers and manages the YIS component of the NZYTM. The NZYTM Research Coordinating Group provides expert research guidance and advice. Members of the group contributing to the 2014 survey were:

- Professor Richard Edwards (Professor of Public Health and Head of Department, Department of Public Health, Wellington School of Medicine and Health Science, University of Otago).
- Professor Rob McGee (Professor, Cancer Society Social and Behavioural Research Unit, Preventative and Social Medicine, Dunedin School of Medicine, University of Otago).
- Anaru Waa (Lecturer/Research Fellow, Wellington School of Medicine and Health Science, University of Otago).
- Stephanie Erick (Director, ASH).
- Dr Rhiannon Newcombe (Principal Researcher, Research and Evaluation Unit, HPA).
- Dr Darren Walton (Manager, Research and Evaluation Unit, HPA).

INTRODUCTION

The Youth Insights Survey (YIS) forms part of the New Zealand Youth Tobacco Monitor (NZYTM), a collaborative effort by the Health Promotion Agency (HPA[1]) and Action on Smoking and Health (ASH). The YIS is a nationwide paper-based survey of Year 10 students (predominantly 14 to 15-year-olds) conducted in schools every two years. The YIS was first carried out in its current form in 2006, and the 2014 YIS is the fifth in this series.[2]

The YIS collects data on smoking-related knowledge, attitudes and behaviour, as well as students' interests, lifestyles, activities and media use, and responses to tobacco control initiatives. It monitors the broad spectrum of risk and protective factors that relate to smoking uptake among young people. More information on the YIS, and the wider NZYTM, can be accessed at http://www.hpa.org.nz/what-we-do/nzytm.

This methodology report details the procedures and protocols followed to ensure the YIS produces high quality, robust data. Specific analysis, such as short fact sheets, can be accessed at http://www.hpa.org.nz/research-library/research-publications.

[1] HPA is a New Zealand Crown entity formed in 2012 by the merger of the Health Sponsorship Council (HSC) and the Alcohol Advisory Council (ALAC), and some health promotion programmes previously delivered by the Ministry of Health.

[2] The 2006 and 2008 surveys were known as the 'Year 10 In-depth Survey'. The name was changed to the 'Youth Insights Survey' in 2010.

BACKGROUND

THE BURDEN OF TOBACCO USE IN NEW ZEALAND

Tobacco use is the leading preventable cause of premature death in New Zealand. Around 5,000 deaths a year are attributable to tobacco-related illness, in a population of just over 4 million (Minister of Health, 2005). Around one in seven New Zealanders (15%) aged 15 years and over smoke (Statistics New Zealand, 2013).

The cost of tobacco use to the health system and New Zealand society has resulted in the Government health target of "better help for smokers to quit" (Ministry of Health, 2011). The Ministry of Health also aims to reduce smoking initiation and exposure to second-hand smoke (Ministry of Health, 2010). Most adults who smoke start the behaviour in their youth, before reaching the age of 18 (Centers for Disease Control and Prevention, 1994). As such, young people are a focus of tobacco control strategies and health promotion in New Zealand.

In 2013, 7% of all 14 and 15-year-old school students reported that they smoked regularly (at least daily, weekly or monthly) (Action on Smoking and Health, 2014). There has been a reduction in smoking among this age group since 1999, when around 3 in 10 (29%) reported that they smoked regularly. However, ethnic disparities in smoking rates still remain in 2013, as 15% of Māori students of this age reported that they smoked regularly (Action on Smoking and Health, 2014). Continuing to monitor youth attitudes and behaviours is critical to understanding and reaching this audience and preventing uptake in later adolescent years and will help demonstrate New Zealand's progress towards being a smokefree country by 2025.

MONITORING YOUTH TOBACCO USE IN NEW ZEALAND

National adult smoking prevalence data has been routinely collected through the Census of Population and Dwellings and the New Zealand Tobacco Use Survey (Ministry of Health, 2006; Ministry of Health 2009). In-depth information about tobacco-related knowledge, attitudes and behaviour was collected by the Health Sponsorship Council through the Smokefree/Auahi Kore Adult Monitor up until 2006 (Health Sponsorship Council, 2006). The continuation of this monitor is now in the form of the tobacco section of HPA's biennial Health and Lifestyles Survey (HLS), which was first carried out in 2008 (Health Promotion Agency, 2014).

Information on youth smoking and tobacco control has traditionally been collected and managed by a range of agencies in New Zealand. In 2006, the NZYTM was established to bring three youth surveys - the Global Youth Tobacco Survey (GYTS), the ASH Year 10 Snapshot Survey, and the YIS - together under one partnership.

The ASH Year 10 Snapshot is an annual cross-sectional census of 14 and 15-year-old school students' smoking prevalence, which achieves high student participation nationwide.

Understanding how and why some young people start smoking is a key driver for tobacco research and evaluation. The biennial YIS collects in-depth information on tobacco-related knowledge, attitudes and behaviour, exposure to second-hand smoke and role-modelling of smoking behaviour, as well as a wide range of information on youth culture, lifestyles, and risk and protective factors related to smoking uptake. The YIS informs and helps to evaluate HPA's Smokefree/Auahi Kore programme, the wider HPA in terms of its commitment to encouraging New Zealanders to adopt and maintain healthy lifestyles, and the wider tobacco control and youth sectors.

OBJECTIVES OF THE YIS

The YIS was developed to improve the understanding of students' attitudes, knowledge, beliefs and behaviours related to smoking, exposure to role models who smoke, and exposure to second-hand smoke. The survey also aims to build understanding of the social environment of young people in New Zealand, particularly youth culture, sport and extra-curricular activities, media use and connectedness to family, peers, and school. In recent years, the YIS has also collected information on other health-related behaviours such as alcohol consumption.

ETHICAL APPROVAL

The NZYTM project was granted ethical approval from the Ministry of Health's Multiregional Ethics Committee in 2007.

QUESTIONNAIRE CONTENT DEVELOPMENT

The 2014 YIS questionnaire was developed by the NZYTM Research Coordinating Group (RCG) to collect high-quality, in-depth information using validated questions. The questionnaire was also designed to maintain comparability with previous surveys, such as the 2006, 2008, 2010 and 2012 YIS surveys, the Youth Lifestyle Survey (YLS), the Global Youth Tobacco Survey (GYTS), and the ASH Year 10 Snapshot. Cognitive testing was undertaken to ensure questions were easy to answer and would collect reliable and valid data.

Table 1 outlines the topic areas in the 2014 YIS questionnaire. The questionnaire itself can be found online at http://www.hpa.org.nz/research-library/research-publications.

Table 1: Summarised content of the 2014 YIS questionnaire.

Topic area	Output details
Demographics	• Age, sex, ethnicity
Smoking	• Smoking behaviours • Susceptibility of smoking uptake • Access to tobacco • Attitudes and beliefs about smoking • Addiction and cessation • Exposure to second-hand-smoke and role models who smoke • Use of electronic cigarettes • Health promotion and smokefree messages
Other health-related behaviours	• Alcohol consumption and marijuana use
Wellbeing	• General self-esteem and emotional wellbeing
Youth culture and lifestyles	• Youth culture, lifestyles, and interests
Connectedness	• To school, friends, and family

SAMPLE DESIGN AND SELECTION

Year 10 students (predominantly 14 to 15-year-olds) represent a critical age group when smoking behaviour increases rapidly, and this group has been treated as the standard population to monitor youth smoking in New Zealand (Reeder, Waa & Scragg, 2000). In 2014, all schools (state and private) with Year 10 students were eligible to participate in the YIS. Correspondence school students were excluded from the sample list, primarily to maintain student anonymity. Five special needs schools were also excluded because they had previously asked to be excluded on an ongoing basis because they did not think their students would be able to complete the survey. The YIS employed a two-stage cluster sample design - school selection, then class selection. This method is consistent with the GYTS sample selection procedure, and produces a nationally representative sample of Year 10 students. This procedure involved three steps:

Step 1: School sample selection with probability proportional to school enrolment size

A list of all eligible schools with Year 10 students and their total Year 10 enrolments was compiled. A random sample of 186 schools was selected from the list using Stata/IC 13.1. The probability of selection was proportional to the 2013 mid-year roll size, and classes within schools were selected so that the overall probability of selection of each student was equal. Every eligible Year 10 student in New Zealand had a chance of being selected.

Step 2: Recruiting schools

All 522 eligible schools in New Zealand were informed of the upcoming NZYTM through a letter sent to school principals. Of these, the 186 schools selected for the YIS sample list were sent a second letter and principals, or a nominated member of staff, were contacted by phone to explain the survey, its purpose and objectives. Consent forms were sent to schools to be completed and returned. Given the anonymity of the survey and the minimal risk of harm to students it was not considered necessary to seek active consent from parents (Ruiz-Canela et al., 2013). However, schools were given newsletter inserts they could use to advise parents that their child's school had been invited to take part, the details of the survey, and that their child would decide themselves whether or not to participate. Schools that participated in the YIS were given a pack of smokefree merchandise.

Step 3: Class selection as a systematic equal probability sample with a random start

For each school that consented, one Year 10 class was randomly selected from a list of all mutually exclusive Year 10 classes. Each eligible student had only one chance to participate and an equal opportunity of selection. All students in a selected Year 10 class were invited to participate.

DATA COLLECTION

The 2014 YIS was administered in schools during the last six weeks of the second term of the school year (between 26 May and 04 July).

The survey was administered by experienced research fieldworkers from Research New Zealand. To train these fieldworkers for the YIS, training sessions were held using discussion and role-plays to build understanding of the survey administration guidelines. Fieldworkers managed the distribution and collection of questionnaires at their allocated schools. Responsibilities when administering the survey included:

- ensuring adequate student attendance for the survey (fieldwork to go ahead only if 75% of students were in class)
- explaining the purpose, anonymity and voluntary nature of the survey to students
- ensuring teachers did not look at responses
- establishing 'test' conditions in the classroom, and asking students to refrain from talking or interacting while completing the survey collecting completed surveys from students, and returning surveys to the research company.

One Year 10 class in each school participated in the YIS survey, which took one full class period to complete.

Participants selected responses using a self-administered paper questionnaire booklet. The front cover of the booklet included the instruction “Please confirm that you agree to take part in this survey. Your answers will be grouped with other students’ answers and nobody will be able to know your individual answers in the survey reports”. No identifying information was collected from participants to ensure anonymity. However, each questionnaire had a unique serial number for tracking during survey administration and data preparation.

Completed questionnaires for the YIS were sent to Converga Group Limited for data capture (via scanning) and dataset production. Business rules were applied to ensure maximum automation and data quality. These rules included how to deal with missing, inconsistent or ambiguous responses, automated coding, where possible, of open-ended questions to an agreed coding frame, and checks to ensure data were in the required range for each question. Responses that failed the business rules, as flagged by the data capture platform, were manually reviewed by an operator. Converga estimated a 98% data accuracy rate based on these technology solutions and manual review.

RESPONSE RATES

A key measure used to assess the overall quality of a survey is the response rate. The response rate is a measure of how many people who were selected to take part in the survey actually participated. The response rate reflects the proportion of people surveyed from those who were selected into the sample, and describes the success of the study in terms of achieving cooperation from the population being measured. A high response rate means the survey results are more representative of the target population.

Of the 186 schools in the sample list, 142 participated in the 2014 YIS, giving a school response rate of 76%. One Year 10 class at each school participated in the survey, and 84% of students in the participating school classes completed questionnaires for the survey (Table 2). The YIS uses a response rate formula that estimates and accounts for non-response due to student absenteeism, and students who refuse to participate. Overall, the 2014 YIS achieved a 64% response rate.

Table 2: YIS 2014 school, student, and overall response rates (RR).

School RR		**Student RR**		**Overall RR (%)**
Participation (n)	RR (%)	Participation (n)	RR (%)	
142/186	76	2935/3504	84	64

Three of the non-participating schools did not have any Year 10 students in 2014 (as the sample was derived from the 2013 mid-year rolls), but indicated they would have participated if they had done so. Six schools had fewer than the agreed 75% of students in class when the survey was administered, as the students were absent and no back up appointment was available.

SAMPLE CHARACTERISTICS

The survey collected information from 2,935 students. Thirteen students were then excluded from the sample because they did not give their gender or ethnicity (needed for weighting), and three were excluded because they did not tick the consent box on the front of the questionnaire. The final sample size was therefore 2,919. As shown in Table 3, the sample characteristics closely resemble those of the Year 10 student population in New Zealand.

Table 3: Characteristics of 2012 YIS sample population (excluding missing gender and ethnicity).

		Unweighted sample population		National Y10 population*
		n	%	%
Total	Total	2,919	100.0	
Gender	Male	1,419	48.6	51.1
	Female	1,500	51.4	48.9
Age	13 years or younger	47	1.6	
	14 years	2,413	82.7	
	15 years	442	15.1	*not available*
	16 years or older	8	0.3	
	No response	9	0.3	
Ethnicity (prioritised)	Māori	700	24.0	23.4
	Pacific	321	11.0	9.5
	Asian	353	12.1	10.1
	Other**	202	6.9	8.6
	NZ European/Pākehā	1,343	46.0	48.4

* Source: Information Officer, Data Management Unit, New Zealand Ministry of Education, November 2014.

** 'Other' category includes NZAID/Foreign Fee paying students, and 'European' student categories.

WEIGHTING

To ensure that no population group is under or over-represented in estimates from the survey, 'weights' are calculated for every survey participant. The weight can be thought of as the number of people in the population represented by a given survey participant.

Data were weighted to adjust for sample selection (school and class-level), non-response (school, class and student-level), and post-stratification of the sample population relative to the gender and ethnicity distribution of Year 10 students in New Zealand (Ministry of Education Information Officer, 2014). Students who had not given a response to two critical demographic questions (gender and ethnicity) were excluded from the analysis.

The YIS weighting factor (W) uses the following formula:

$$W = W1 * W2 * f1 * f2 * f3 * f4$$

Where:

W1= the inverse of the probability of selection for each school

W2= the inverse of the probability of selection of each classroom within each selected school

f1= a school-level, non-response adjustment calculated by school enrolment size category (small, medium, large); school non-response is calculated within each tertile

f2= a class-level, non-response adjustment factor calculated for each school

f3= a student-level, non-response adjustment factor calculated for each class

f4= a post-stratification factor to adjust the sample gender and ethnicity distributions to those of the national Year 10 student population

TECHNICAL NOTES FOR ANALYSIS

Descriptive 2014 YIS analyses are presented in a series of fact sheets (available at http://www.hpa.org.nz/research-library/research-publications). Analyses for these fact sheets were undertaken using Stata/IC 13.1 statistical analysis software, and technical techniques used are discussed below.

SUPPRESSION DUE TO SMALL NUMBERS

To ensure the survey data presented are reliable and that the confidentiality of the participants is protected, data are only presented when there are at least 30 people in the denominator (the population group being analysed). This ensures that no participant can be identified from the results.

CONFIDENCE INTERVALS

Ninety-five percent confidence intervals are used to represent the sample error for estimates. A 95% confidence interval means there is a 95% chance the true value of the estimate (if the whole population was sampled) lies between the lower and upper confidence values.

Differences between estimates are said to be 'statistically significant' when the confidence intervals for each group do not overlap. However, even when there are overlapping confidence intervals the difference between the groups can be statistically significant when the variance is sufficiently small.

Any differences between two groups where the confidence intervals overlap are tested using the most appropriate statistical test for that data. The significance of many different statistical tests is represented by a probability value, or p-value. If a p-value is below 0.05, then we are 95% confident the difference between the two groups is not due to chance.

REPLICATE WEIGHTS

Standard errors are a measure of the precision of an estimate and replicate weights are a method for obtaining standard errors for any weighted estimates. To remove bias in the estimate arising from any particular school, jack-knife replicate weights are used. This means that the estimate is first calculated from a sample of all respondents except those in a particular school, and then this calculation is repeated excluding a different school each time. The standard error of the population estimate is based on the variation of the replicate estimates.

CREATION OF DERIVED VARIABLES

YIS analysis often includes a range of derived socio-demographic variables, and the most common of these are presented in Table 4.

Table 4: Common derived socio-demographic variables.

Variable	Creation	Levels
Gender	Self-identified	Male, Female
Prioritised ethnicity	Multiple responses from list, coded, and prioritised in the order indicated (see Ministry of Health (2004) for further information on the prioritisation method)	Māori, Pacific, Asian, Other, NZ European
Māori or non-Māori	Multiple responses from list, coded, and categorised as to whether respondent identified as Māori or not	Māori, Non-Māori
Socio-economic status (SES)	School decile is used as a measure of each student's SES. Decile 1 to 10 as provided by the Ministry of Education for participating schools reclassified as 1 to 4 (most deprived), 5 to 7, and 8 to 10 (least deprived). For further information, see Ministry of Education (2009).	Low: School decile 1 to 4 Mid: School decile 5 to 7 High: School decile 8 to 10, 'private'
Smoking status	Determined by answers to the questions "*Have you ever smoked a cigarette, even just a few puffs?*" and "*How often do you smoke now?*"	Never smoker (answered 'no' when asked if they had ever smoked) Current smoker (smoked at least once a day, at least once a week, or at least once a month when asked how often they smoked)
Smoking susceptibility	Determined by answers to the questions "*If one of your best friends offered you a cigarette, would you smoke it?*" and "*At any time during the next year (12 months) do you think you will smoke a cigarette?*"	Non-susceptible never smoker (answered 'definitely not' to both questions) Susceptible never smoker (answered anything *except* 'definitely not' to both questions – including non-response)
Parental smoking status	Determined by whether respondents answered 'mother' and 'father' when asked "*Which of the following people smoke?*"[3]	Neither parents (answered that neither 'mother' or 'father' smoked) Single parent (answered that either 'mother' and 'father' smoked) Both parents (answered that both 'mother' and 'father' smoked)
Friends' smoking status	Determined by answers to the question "*How many of your 5 closest friends smoke?*"	None of five closest friends smoke, Some of five closest friends smoke

[3] The parental smoking status banner was derived like this for simplicity. This approach is consistent with ASH analysis of parental smoking.

REPORTING

Descriptive reports were produced to report on YIS data in 2006 and 2008. From 2010 onwards, a series of smaller descriptive fact sheets were produced by topic area. Comparisons by subgroups – smoking status, ethnicity, gender, and other subgroups where appropriate – are presented in the fact sheets. Time trend analysis, where appropriate, is also conducted and reported on.

Further analysis, reporting, and dissemination will be carried out by the HPA and the RCG in 2014 and beyond, through a variety of formats such as fact sheets, journal articles, and media articles.

HPA's YIS publications can be accessed at http://www.hpa.org.nz/research-library/research-publications.

ACCESS TO CONFIDENTIAL MICRODATA

The analyses presented in HPA publications are only a small proportion of those that could be undertaken. Confidentialised microdata from the 2014 YIS may be available by late 2015 for approved researchers to use for specific research projects.

The microdata will have all identifying information about individuals removed and be modified to protect individual information. Approval will be subject to certain criteria, terms and conditions and the researcher's organisation will have to sign an access agreement with HPA.

Contact HPA for more information
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