

2018 Youth Insights Survey Methodology Report

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Prepared for the Health Promotion Agency/Te Hīringa Hauora by:
Niveditha Gurram and Thewaporn (Wa) Thimasarn-Anwar, Health Promotion Agency.

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Any queries regarding this report should be directed to HPA at the following address:

Health Promotion Agency

PO Box 2142

Wellington 6140

New Zealand

www.hpa.org.nz

enquiries@hpa.org.nz

TABLE OF CONTENTS

| | |
|--|-----------|
| Acknowledgements | 4 |
| Executive summary | 5 |
| 1. Introduction | 6 |
| 2. Background | 7 |
| 3. Questionnaire content development | 8 |
| 4. Sample design and selection | 9 |
| 5. Data collection | 10 |
| 6. Method of calculating response rates | 11 |
| 7. Achieved Response rates | 14 |
| 8. Sample characteristics | 15 |
| 9. Weighting | 16 |
| 10. Technical notes for analysis | 17 |
| 11. Reporting | 20 |
| 12. Accessing data | 21 |
| 13. References | 22 |
| 14. Appendix 1: Definitions | 24 |

Tables

| | | |
|----------|--|----|
| Table 1: | Summarised content of the 2018 YIS questionnaire | 8 |
| Table 2: | YIS 2018 school, student and overall response rates (RR) | 15 |
| Table 3: | Characteristics of the 2018 YIS sample population | 16 |
| Table 4: | Common derived socio-demographic variables | 19 |

Figures

| | | |
|-----------|--|----|
| Figure 1: | Flow diagram for Year 10 In-depth Survey response rate calculation | 14 |
|-----------|--|----|

List of acronyms

| | |
|-------|-----------------------------------|
| ASH | Action on Smoking and Health |
| GYTS | Global Youth Tobacco Survey |
| HLS | Health and Lifestyles Survey |
| HPA | Health Promotion Agency |
| NZYTm | New Zealand Youth Tobacco Monitor |
| YIS | Youth Insights Survey |

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Thank you to all the school staff and students who participated in the 2018 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 beliefs and lifestyles in general.

Many thanks to Research New Zealand, in particular Katrina Magill, for the survey recruitment and fieldwork. Thank you also to the fieldworkers employed by Research New Zealand. Thank you to Paperhouse Document Management Pty Ltd for the data capture, in particular to Jason Plunkett.

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.

Health Promotion Agency (HPA) staff involved in running and analysing the 2018 YIS included Sarah Rendall and Caitlin Potter. Credits also to other HPA staff who contributed to the survey, and especially to Alana Oakly for 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 to Robert Beaglehole, Boyd Broughton and Sally Wong at ASH for their contributions.

HPA administers and manages the YIS component of the NZYTM. The NZYTM Scientific Advisory Group provides expert research guidance and advice. Members contributing to the 2018 survey included:

- Professor Richard Edwards (Professor of Public Health and Co-Director of ASPIRE2025, Department of Public Health, Wellington School of Medicine and Health Science, University of Otago).
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- Sally Wong (Researcher, ASH).
- Greg Martin (Team Lead Research, Policy, Research and Advice, HPA).
- Sicily Sunseri (formerly Researcher, Policy, Research and Advice, HPA).

EXECUTIVE SUMMARY

The following table provides a summary of key methodological elements of the Youth Insights Survey 2018.

| | |
|-----------------------------|--|
| Overview | Nationwide, paper-based survey |
| Objective | <p>To measure progress against HPA's existing programme plans and provide quality measures for Statement of Intent reporting requirements.</p> <p>To improve the understanding of young people's attitudes, knowledge, beliefs and behaviours related to smoking, their exposure to second-hand smoke and other health related behaviours such as alcohol consumption and marijuana use.</p> <p>To build understanding of youth culture, sport and extra-curricular activities, media use and connectedness to family, peers and school.</p> |
| Target population | Year 10 students from all eligible schools in New Zealand |
| Sample composition | Year 10 students (predominantly 14 to 15-year olds) |
| Frequency | Every two years since 2006 |
| Primary sampling unit (PSU) | A list of all eligible schools from the Ministry of Education school directory was used as the PSU |
| Sampling method | Two-stage cluster sampling, where first schools are selected and then classes are selected within the school |
| Survey period | 21 May to 6 July 2018 |
| Sample size | 2,758 students |
| Unweighted response rates | Schools: 68%; Students: 85% |

1. INTRODUCTION

The Youth Insights Survey (YIS) forms part of the New Zealand Youth Tobacco Monitor (NZYTM), a collaborative effort by the Health Promotion Agency/Te Hīringa Hauora (HPA) and Action on Smoking and Health (ASH). The NZYTM includes both the YIS and the ASH Year 10 Snapshot Survey¹. 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 2018 YIS is the seventh in the series.²

The YIS collects data on smoking-related knowledge, attitudes, behaviour and their responses to tobacco control initiatives. It also collects data on other health related behaviours, lifestyles, activities, internet use and their connectedness to family and friends. It monitors a 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 <https://www.hpa.org.nz/our-work/programmes/tobacco-control/new-zealand-youth-tobacco-monitor>.

This methods 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: <https://www.hpa.org.nz/our-work/research/publications>.

¹ The ASH Year 10 Snapshot is an annual cross-sectional census of the smoking prevalence among 14 and 15-year-old school students with a high level of student participation.

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

2. BACKGROUND

2.1 THE BURDEN OF TOBACCO USE IN NEW ZEALAND

Tobacco use is one of the leading major health risk factors, accounting for 8.7 percent of all disability adjusted life years³ (DALYs) in New Zealand (Ministry of Health, 2016). Between 4,500 and 5,000 deaths a year are attributable to tobacco-related illness, in a population of just over 4.6 million (Ministry of Health, 2013). The most recent data show that about 14.9% of adults (aged 15 years or over) are current smokers (Ministry of Health, 2018).

In 2017, 4.9% of all 14 and 15-year old students in New Zealand reported regular smoking (at least daily, weekly or monthly). There has been a reduction in smoking among 14 and 15-year-olds since 2000, when the smoking rate in this age group was more than five times higher at around 28%. While smoking rates in the overall population have decreased, ethnic disparities in smoking rates persist. In 2000, these disparities were pronounced, with 43% of Māori 14 and 15-year olds having reported smoking regularly, compared to 26% of Non-Māori. In 2017, the overall smoking rates were lower but there are continued ethnic disparities, with 11% of Māori 14 and 15-year olds who reported smoking regularly, compared to 3.3% of Non-Māori (Action on Smoking and Health, 2017).

2.2 OBJECTIVES OF THE YIS

The objectives of the YIS are threefold:

- To provide quality measures for the Statement of Intent reporting requirements (that is people living in New Zealand are more aware, inspired and able to improve and protect their own and their whānau's health and wellbeing)
- To improve the understanding of young people's attitudes, knowledge, beliefs and behaviours related to smoking, and their exposure to second hand smoke as well as role models who smoke.
- To build understanding of the social environment of young people in New Zealand, particularly youth culture, interests, sport and extra-curricular activities, media use and connectedness to family, peers and school. In recent years, the survey also collected information on other health related behaviours such as alcohol consumption and drugs.

2.3 ETHICAL APPROVAL

The NZYTM project was first granted ethical approval from the Ministry of Health's Multiregional Ethics Group in 2007 and since then from the Health and Disability Ethics Group on an annual basis (Number MEC/07/10/141).

³ Disability-adjusted life year (DALY): Integrated measure of health loss. DALY is the sum of years of life lost (YLL) and years lived with disability adjusted for severity (YLD). So one DALY represents the loss of one year of life lived in full health (Ministry of Health, 2013).

3. QUESTIONNAIRE CONTENT DEVELOPMENT

The 2018 YIS questionnaire was developed by the NZYTM Scientific Advisory Group to collect high-quality, in-depth information using validated questions. The questionnaire was also designed to maintain comparability with previous YIS surveys (2006 to 2016), the Youth Lifestyle Survey (YLS), the Global Youth Tobacco Survey (GYTS), and the ASH Year 10 Snapshot.

The 2018 survey included the proprietary iBase questionnaire (see https://rescueagency.com/wp-content/themes/rscg/style/pdf/peer_science_overview.pdf) to identify survey respondent's peer crowd affiliations⁴. Cognitive testing was undertaken to ensure questions were easy to answer, and that reliable and valid data were collected.

Table 1 outlines the topic areas in the 2018 YIS questionnaire. For 2018 YIS questionnaire, see <https://www.hpa.org.nz/our-work/research/publications>.

Table 1: Summarised content of the 2018 YIS questionnaire

| Topic area | Output details |
|---|---|
| Demographics | <ul style="list-style-type: none">• Age, gender, sexual orientation, ethnicity |
| Smoking | <ul style="list-style-type: none">• 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• Health promotion and Smokefree messages |
| Electronic cigarettes (E-cigarettes) or vapes | <ul style="list-style-type: none">• Use of electronic cigarettes or vapes• Reasons for uptake• Flavour use• Exposure to e-cigarette advertisements |
| Other health-related behaviours | <ul style="list-style-type: none">• Alcohol consumption and marijuana use |

⁴ Peer crowd affiliation is an innovative way to identify high-risk subgroups among young adolescents. 'Peer crowds' are the large scale connections between peer groups with similar values, interests, lifestyles, styles of dress, media consumption habits and influencers. Different peer crowds are often linked to various risky health behaviours.

| | |
|------------------------------|---|
| | <ul style="list-style-type: none"> • Mental health |
| Wellbeing | <ul style="list-style-type: none"> • General self-esteem and emotional wellbeing |
| Youth culture and lifestyles | <ul style="list-style-type: none"> • Youth culture, lifestyles, beliefs and interests |
| Connectedness | <ul style="list-style-type: none"> • To schools, friends and family • Peer crowd affiliation (iBase survey) |

4. SAMPLE DESIGN AND SELECTION

In 2018, all schools (state and private) with Year 10 students were eligible to participate in the YIS. Correspondence⁵ school students were excluded from the sample list, primarily to maintain student anonymity. Seven special schools for students with high needs were also excluded as given previous agreements to exclude these schools on an ongoing basis due to difficulties with survey completion for their students. A further two schools which do not admit Year 10 students were also excluded.

The YIS employed a two-stage cluster sample design which was 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. The information on year 10 enrolments in each school was obtained through a contact letter sent to schools. A random sample of 186 schools were selected from the list. The probability of selection was proportional to the 2017 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 540 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 recruitment packs⁶ and principals, or a nominated member of staff, were contacted by phone to explain the survey, its purpose and objectives. School principals completed consent forms. Given the anonymity of the survey and the minimal risk of harm to students it was not considered necessary to seek written consent from parents (Ruiz-Canela et al., 2013). Schools were, however, given newsletter inserts (two sets of Education Gazette notices, one each term) which advised

⁵ Correspondence school is any school that offers its courses to students through distance learning.

⁶ Recruitment pack comprised of a letter to principal, consent form, and a prepaid envelope.

parents of the school's participation, details of the survey, and clarification that their child could decide whether or not to participate. Schools that participated in the YIS were given a donation of Smokefree merchandise.

Step 3: Class selection

In each consenting school, 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.

5. DATA COLLECTION

The 2018 YIS was administered in schools during the last six weeks of the second term of the school year (between 21 May and 6 July) and took one full class period to complete.

The survey was administered by research fieldworkers from Research New Zealand. In order to train fieldworkers for the YIS, discussion and role-play activities were used in sessions designed to build fieldworkers 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 only went ahead if 75% of students were present at the time of data collection)
- 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 (asking students to refrain from talking or interacting while completing the survey), collecting completed surveys from students, and returning surveys to the research company.

Participants selected responses using a self-administered paper questionnaire booklet. To ensure anonymity, no identifying information was collected from participants. However, each questionnaire had a unique serial number for tracking during survey administration and data preparation.

Completed questionnaires were sent to Paperhouse Document Management Pty Ltd 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, an agreed coding frame for open-ended questions, as well as 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. Paperhouse estimated a 98% data accuracy rate based on these technology solutions

and manual review. Both electronic and paper copies of completed questionnaires with no identifying information were securely stored for future reference.

6. METHOD OF CALCULATING RESPONSE RATES

6.1 STUDENT LEVEL RESPONSE RATE CALCULATION

Student level response rate, defined as the proportion of eligible⁷ students who complete the YIS out of those who were included in the sample list (see Figure 1, for in-depth survey response rate calculation), used the following formula:

$$\frac{Q+P}{eScS + eScR + eCS + SR + S + Q + P}$$

Where (see Appendix 1 for definitions):

| | | |
|------|---|---|
| eScS | = | School non-contact student class roll estimate |
| eScR | = | School level refusal estimate |
| eCS | = | Class non-contact student class roll estimate |
| S | = | Student non-contact ⁸ |
| SR | = | Student level refusal |
| Q | = | Completed questionnaires |
| P | = | Partially completed questionnaires completed to a predetermined acceptable standard |

All other questionnaires not meeting this standard were deemed non-contacts.

6.1.1 School non-contact student class roll estimate (eScS)

An estimate of the number of students who would have been selected to participate if a school had been contacted and consented to participate. This is calculated by using the Ministry of Education (MoE) 2017 school enrolment data and the average number of Year 10 students per class for schools that participated in the survey.

⁷ Student eligibility criteria for YIS:

- In Year 10 at school
- Not in correspondence school

⁸ Note this variable differs from the GYTS formula in that for the YIS it is not viewed as an 'estimate' but rather an actual figure derived from class roll data.

6.1.2 School level refusal estimate (eScR)

An estimate of the number of students who would have participated if a school that had been contacted had consented to participate in the YIS. The preferred method was to obtain Year 10 class roll lists from the school and use the YIS class selection method to identify a class that would have participated and the corresponding number of students enrolled. The alternative method if this was not possible was to use Ministry of Education class enrolment data and calculate average class size.

6.1.3 Class non-contact student class roll estimate (eCS)

An estimate of the number of eligible students who would have participated in classes that were selected to participate in the YIS but for some reason did not participate. This was calculated by using school data to determine size of non-contacted class. If school data was not available, the alternate method described under eScR above was used.

6.1.4 Student level refusal (SR)

The number of students who refused to do the survey. The interviewer was instructed to record how many students refused on the class cover sheet.

6.1.5 Student non-contact (S)

The number of eligible students at a participating school who were not present on the day of the survey⁹. This was determined by calculating the number of total students recorded in the class list minus both completed surveys and student refusals.

6.2 SCHOOL LEVEL CONSENT RATE CALCULATION

The proportion of selected schools that provided consent forms to participate. Calculated by:

$$\frac{\text{Received school consent forms}}{186 (\text{Received consent forms} + \text{school non-contact} + \text{school refusals})}$$

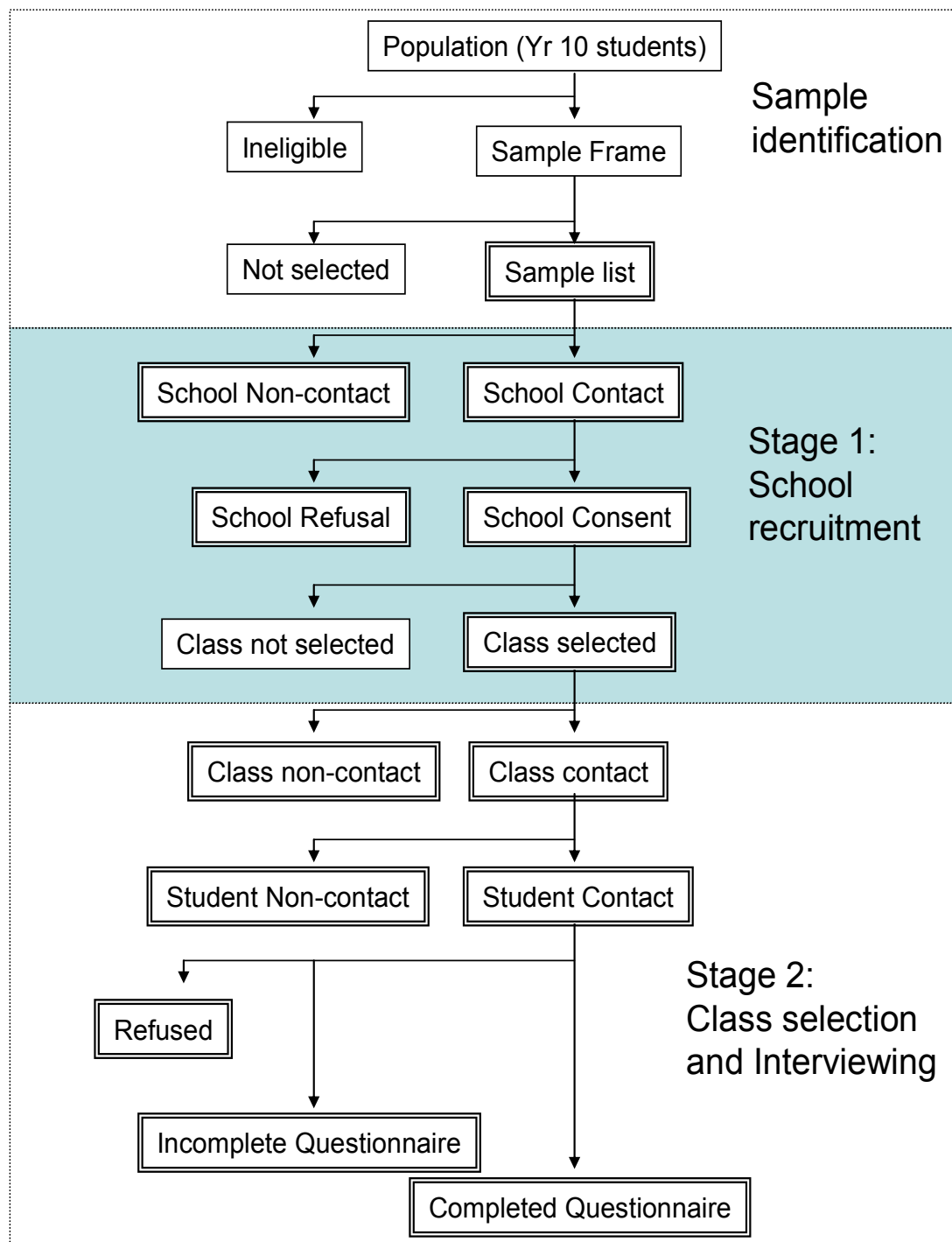
6.3 STUDENT LEVEL PARTICIPATION RATE CALCULATION

The proportion of students selected to participate in the survey who completed questionnaires. Calculated by:

$$\frac{\text{Completed (and partially completed) questionnaires}}{\text{Completed (and partially completed) questionnaires} + \text{SR} + \text{S} + \text{eCS}}$$

⁹ In general, if a class has less than 75% of students who are normally enrolled in the class not present on the day of the survey the field worker is expected to schedule a new survey time for that class.

Figure 1: Flow diagram for Year 10 In-depth Survey response rate calculation



7. ACHIEVED RESPONSE RATES

The response rate is used to assess the overall quality of the survey. The response rate reflects the number of people who answered the survey divided by the number of people selected into the sample, and describes the success of the study in terms of achieved cooperation from the population being measured. A higher response rate allows greater confidence in the validity of the data and the precision of the estimates.

Of the 186 schools in the sample list, 126 participated in the 2018 YIS, giving a school response rate of 68%. One Year 10 class at each school participated in the survey, and 85% 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 2018 YIS achieved a 59% response rate.

Table 2: YIS 2018 School, student and overall response rates (RR)

| School RR | | Student RR | | Overall RR (%) |
|-------------------|--------|---------------------|--------|----------------|
| Participation (n) | RR (%) | Participation (n) | RR (%) | |
| <u>126</u> 186 | 68 | <u>2758</u> 3232 | 85 | 59 |

The survey was not completed by three schools as they 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.

8. SAMPLE CHARACTERISTICS

The survey collected information from 2,758 students. As shown in Table 3, the sample characteristics closely resemble those of the Year 10 student population in New Zealand.

Table 3: Characteristics of 2018 YIS sample population

| | | Unweighted sample population | | National Y10 population* |
|----------------------------|---------------------|------------------------------|-------|--------------------------|
| | | n | % | % |
| Total | Total | 2,758 | 100.0 | |
| Gender | Male | 1,386 | 48.6 | 51.0 |
| | Female | 1,340 | 50.3 | 49.0 |
| | Other | 30 | 1.1 | |
| | No response | 2 | 0.1 | |
| Age | 13 years or younger | 42 | 1.5 | <i>not available</i> |
| | 14 years | 2,166 | 78.5 | |
| | 15 years | 523 | 19 | |
| | 16 years or older | 21 | 0.8 | |
| | No response | 6 | 0.2 | |
| Ethnicity (prioritised) | Māori | 646 | 23.4 | 23.8 |
| | Pacific | 247 | 9 | 9.7 |
| | Asian | 377 | 13.7 | 11.3 |
| | Other** | 175 | 6.4 | 4.1 |
| | NZ European/Pākehā | 1,298 | 47.1 | 51.1 |
| | No response | 15 | 0.6 | |

* Source: Ministry of Education, 2018

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

9. 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, 2018). For the purpose of weighting only, gender and ethnicity were imputed for students who did not respond to these demographic questions.

For gender, participants were given three options: male, female and other. Students who gave an invalid (missing) or other response were imputed for purpose of weighting, because the MoE data only records gender as male or female. The gender of 32 students was imputed using the following steps. First, a logistic regression model was fitted. In the model, participants' gender was treated as the outcome variable. A series of questions assessing participants' interests were treated as predictors (examples of these items include basketball, photography and writing). Second, the model was used to calculate the predicted probability of being male or female. More specifically, given information on their interests, we can predict which of the two categories (male or female) a participant is likely to belong to. The model provided a predicted accuracy of 86%.

For ethnicity, data from 15 students was imputed as other ethnicity because this was the largest group. Imputed gender and ethnicity was used for weighting only and imputed variables were not used in 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

10. TECHNICAL NOTES FOR ANALYSIS

Initial descriptive analyses from the 2018 YIS will be available on the Tobacco Control Data Repository and further analyses will be available at <http://www.hpa.org.nz/research-library/research-publications> as they are completed. Analyses are undertaken using Stata/IC 15.0 statistical analysis software, and technical techniques used are discussed below.

10.1 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.

10.2 CONFIDENCE INTERVALS

Ninety-five percent confidence intervals are used to represent the sample error for estimates. A 95% confidence interval means that if repeated samples were taken and the 95% confidence interval was computed for each sample, 95% of the intervals would contain the true value.

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 p value for a statistical test is the probability of getting our observed test result (or a more extreme result), if there is really no difference. We follow the usual convention of interpreting test results with p values below 5% as statistically significant.

10.3 REPLICATE WEIGHTS

Standard errors are a measure of the precision of an estimate; 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; 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.

10.4 CREATION OF DERIVED VARIABLES

The questionnaire was designed to capture demographic information such as age, gender and ethnicity, and contained various internationally validated measures designed to monitor smoking-related knowledge, and other health related behaviours, and lifestyles.

10.4.1 Socio-demographic variables

The most common of these are presented in Table 4.

Table 4: Socio-demographic variables

| Variable | Creation | Levels |
|--|--|--|
| Gender | Self-identified | Male, Female, Other |
| Prioritised ethnicity | Multiple responses from list, coded, and prioritised in the order indicated (See Ministry of Health (2017) 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 Non-Māori | 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 (2019). | 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 <i>"Have you ever smoked a cigarette, even just a few puffs?"</i> and <i>"How often do you smoke now?"</i> | 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 using Pierce susceptibility scale ¹⁰ | Determined by answers to the questions <i>"Do you think you will try a cigarette soon?"</i> and <i>"If one of your best friends offered you a cigarette, would you smoke it?"</i> and <i>"At any time during the next year (12 months) do you think you will smoke a cigarette?"</i> | Non-susceptible never smoker (answered 'definitely not' to all three questions) Susceptible never smoker (answered anything <i>except</i> 'definitely not' to all three questions – including non-response) |
| Parental smoking status | Determined by whether respondents answered 'mother' and 'father' when asked <i>"Which of the following people smoke?"</i> ¹¹ | Neither parents (answered that neither 'mother' or 'father' smoked) Single parent (answered that either 'mother' or 'father' smoked) Both parents (answered that both 'mother' and 'father' smoked) |
| Friends' smoking status | Determined by answers to the question <i>"How many of your 5 closest friends smoke?"</i> | None of five closest friends smoke, Some of five closest friends smoke |

¹⁰ Pierce susceptibility scale is a 4-item instrument that is used to predict which never smokers are likely to start smoking. Item responses are on a 4-point Likert scale (definitely yes, probably yes, probably not, definitely not) and include "refused" and "don't know" options (Pierce, Choi, Gilpin, Farkas, & Merritt, 1996; Pierce, Farkas, Evans, & Gilpin, 1995).

¹¹ The parental smoking status banner was derived like this for simplicity. This approach is consistent with ASH analysis of parental smoking.

10.4.2 Other measures

Social connectedness

This was an eight-item scale adapted from measures used in the Youth Connectedness Project¹². It was used to capture students' sense of school membership and experiences positive interactions with peers and family. Participants rated themselves on a 5-point scale from 1 (strongly agree) to 5 (strongly disagree), and all were recoded as 5 (strongly agree) to 1 (strongly disagree). Response values from each participant were added to calculate the total score possible scores ranged from 8 to 40. The higher scores are associated with greater social connectedness. The scale (questions Q11_1 to Q11_5 and Q65_1 to Q65_3) had a high internal consistency, with a Cronbach's alpha of 0.78 (for 2018 YIS questionnaire, see <https://www.hpa.org.nz/our-work/research/publications>).

General self-esteem

This was a 10 item instrument adapted from Self-description Questionnaire (SDQ-I) (Marsh, Smith, & Barnes, 1983). This was used to measure several dimensions of self-concept. Participants rated themselves on a 5-point scale from 1 (true) to 5 (false), and all were recoded as 5 (true) to 1 (false). Response values from each participant were added to calculate the total score possible, ranging from 10 to 50. The higher scores are associated with greater self-esteem. The scale (question Q14_1 to Q14_10) had a high internal consistency, with a Cronbach's alpha of 0.87.

Mental health

This was a five-item instrument from the Mental Health Inventory (MHI-5) (Ware, Snoww, Kosinski, & Gandek, 1993). This was used as a validated measure of mental health. Participants rated themselves on a 6-point scale from 1 (all of the time) to 6 (none of the time). For questions Q15_1, Q15_2 and Q15_4, responses were recoded as 0 (all the time) to 5 (none of the time). Meanwhile, for questions Q15_3 and Q15_5, responses were recoded as 0 (none of the time) to 5 (all of the time). Response values from each participant were added and multiplied by four to calculate the total score possible, ranging from 0 to 100. The higher scores are associated with better mental health. The scale had a high internal consistency, with a Cronbach's alpha of 0.8.

¹² The Youth Connectedness Project is one of the biggest studies about young people in Aotearoa / New Zealand that collected information on how connected young people feel to their families, schools, peers, and communities. It surveyed over 1700 young people, aged from 9 to 17, once a year from 2007 to 2009 (Victoria University of Wellington, 2009).

11. 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. A range of analyses are available on the Tobacco Control Data Repository website (https://www.tcddata.org.nz/YIS%20data/YIS_00.aspx).

Further analysis, reporting and dissemination will be carried out by HPA and the NZYTM Scientific Advisory Group in 2019 and beyond, through a variety of formats such as fact sheets, journal articles and media articles.

The Health Promotion Agency's YIS publications can be accessed at: <https://www.hpa.org.nz/our-work/research/publications>.

12. ACCESSING DATA

There are several ways to access data from the YIS. More specifically, findings can be accessed via the publication page (<https://www.hpa.org.nz/our-work/research/publications>). The analyses presented in HPA publications are only a small proportion of those that could be undertaken. Our confidential microdata is available for statistical purposes to researchers working within academic institutions, government agencies, the wider health sector and also for approved researchers to use for specific research projects.

The microdata will have all identifying information about individuals and schools removed and is modified to protect individual and school 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.

To see an overview of smoking prevalence, we gather New Zealand's tobacco control data in one location (www.tcddata.org.nz). Sources for the Tobacco Control Data Repository include the New Zealand Census, Health and Lifestyles Survey (HLS), ASH Year 10 Snapshot Survey, YIS and the New Zealand Smoking Monitor.

Contact HPA for more information

Mail to: research@hpa.org.nz

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14. APPENDIX 1: DEFINITIONS

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|---------------------------|---|
| Population | Total year 10 students in Aotearoa/New Zealand |
| Ineligible | Year 10 students who are ineligible to participate in the survey. These are determined prior to the survey being administered. The main group of ineligible students are those enrolled in correspondence schools. |
| Sample frame | A complete list of sample units that represents the population of interest. The sample frame for YIS is all schools with Year 10 students (excluding correspondence schools). |
| Sample list | A systematically selected list of sample units derived from the sample frame. All units in this list will be attempted to be recruited in to the survey. The sample list for the 2018 YIS is 186 schools. |
| School contact | Schools from the sample list where recruiters successfully made contact with the person at the school who had authority to give consent for a school to participate in a survey. This person was usually deemed to be the principal. In some circumstances this authority may have been delegated by the principal to another person in the school. |
| School non-contact | Recruiter unable to contact principal or delegate. Schools are also defined as non-contact when a recruiter speaks to a secretary/PA who refuses to put them through to the principal or delegate and this continues until the recruitment protocol has been exhausted. |
| School consent | Where contact (principal or delegate) gives written consent to participate. |
| School refusal | Where a contact refuses to give consent either verbally or in written form. |
| Class selected | The second stage of sample selection entails selection of year 10 class only (YIS). |
| Class not selected | These classes are not counted as part of the YIS response rates. |
| Normally present | Students who are enrolled in a selected class and who are normally present in the class. |
| Class contact | This is defined as classes where field worker was able to conduct YIS survey. |
| Class non-contact | This is defined as those classes that were selected to participate within a consenting school but the survey was never conducted. This may be due to adverse weather or other conditions. |
| Student contact | Defined as the students who attend class on the day of survey. |
| Student non-contact | Defined as the students who are not present on the day of the survey who would normally be in the survey class. |
| Refused | This is where a student who is present in the class at the time of the survey refuses to participate in the survey. Students are given the opportunity to refuse participation at the start of the survey. |
| Incomplete questionnaires | These are the questionnaires that have not been fully completed while still meeting minimal completion requirements to be included within the survey. Minimum completion requirements are that key weighting variables have been answered (e.g. age, sex and ethnicity). |
| Complete questionnaires | These are fully completed questionnaires. |