



Youth2000 Survey Series

The Health and Wellbeing of New Zealand Secondary School Students in 2012

Problem substance use among New Zealand secondary school students:

Findings from the Youth'12 national youth health and
wellbeing survey

Title: Problem substance use among New Zealand secondary school students: Findings from the Youth'12 national youth health and wellbeing survey.

ISBN 978-0-473-30053-1 (paperback)

ISBN 978-0-473-30054-8 (electronic)

To be referenced as:

Fleming, T. Lee, A.C., Moselen, E., Clark, T.C., Dixon, R. & The Adolescent Health Research Group (2014). Problem substance use among New Zealand secondary school students: Findings from the Youth'12 national youth health and wellbeing survey. Auckland, New Zealand: The University of Auckland.

The Adolescent Health Research Group* (AHRG) investigators on the Youth'12 project are:

Terryann Clark (Principal Investigator), School of Nursing

Theresa (Terry) Fleming, Department of Paediatrics: Child and Youth Health & Department of Psychological Medicine

Pat Bullen and Ben Dyson, Faculty of Education

Simon Denny, Department of Paediatrics: Child and Youth Health

Sarah Fortune, Department of Psychological Medicine

Roshini Peiris-John and Jennifer Utter, Section of Epidemiology & Biostatistics, School of Population Health

Elizabeth Robinson, Sue Crengle, Auckland UniServices Limited

Fiona Rossen, Social and Community Health

Janie Sheridan, Centre for Addiction Research, and School of Pharmacy

Tasileta Teevale, Pacific Health, School of Population Health

*The AHRG membership has changed over the three surveys. The AHRG investigators are all based at The University of Auckland in New Zealand.

Acknowledgements

A big thank you to:

The students and staff who participated in the survey. Without their patience and help the Youth'12 survey would not have been possible.

.The Youth'12 project manager, Sarah Masson, and administrator, Toni Jardine and the research teams who implemented the survey in participating schools.

The Youth'12 survey was funded by the Ministries of Youth Development, Social Development, Health, Education and Justice, the Department of Labour, the Families Commission and the Health Promotion Agency (formerly ALAC).

We would like to thank Dr Grant Christie and the clinical team from Altered High Youth Service, Auckland Community Alcohol and Drug Services (CADS) for their assistance with defining 'problem substance use' and for their support of this report. And finally, Claudia Rivera for help with analysing the data

This report was funded by the Ministry of Health.

Contact details:

Terryann Clark (Youth'12 Principal Investigator)

Adolescent Health Research Group

School of Nursing

The University of Auckland

Private Bag 92019, Victoria Street West, Auckland, 1142

Email: t.clark@auckland.ac.nz

Further publications by the AHRG are available at youthresearch.auckland.ac.nz

Contents

Executive Summary	5
Key points	7
Introduction	9
Defining Problem (Very High) Use	9
The Adolescent Health Research Group (AHRG)	10
Youth2000 Survey Series	10
How we did the Youth'12 Survey	11
Ethical Issues	11
Survey delivery and content	11
NZ Deprivation Index	12
How to use the information in this report	12
Interpreting the Results	12
How reliable are these findings?	13
The Results	15
The Participants	15
Problem use criteria	17
Substance Use	18
Substance use by student	18
Use by friends and family	19
Usual source of alcohol	20
Issues related to using alcohol	21
Student worried about alcohol or marijuana use	22
Health and Wellbeing	23
Overall health and access to healthcare	23
Place where students usually go for healthcare	24
Healthcare services accessed in the last 12 months	25
Experienced difficulty getting help for health issues	26
Problems with accessing healthcare services	27
Eating, exercise and activities	28
Injuries and Violence	29
Cause of injury that required treatment in the last 12 months	29
Driving injuries	30
Personal violence	31

Emotional Wellbeing	32
Sexual Health	33
Sexuality, gender identity and sexual health	33
Gender identity and sexual orientation	34
Home and Families.....	35
Family relationships.....	35
Home circumstances.....	36
School.....	37
Community and Contribution	38
Community and contribution.....	38
Trouble with the police	39
Gambling	40
Māori Students	41
Demographics of Māori students only	41
Problem use among Māori students and associations with cultural factors	42
Concluding Remarks.....	43
Useful Links	44
References.....	45
Appendices	47
Appendix 1: Very high substance use among students under 16 years old	47
Appendix 2: Very high substance use among students aged 16 years or over	50

Executive Summary

Adolescence is an important stage in life that presents unique opportunities and challenges. Healthy behaviours and environments are critical for teenagers, both for navigating the challenges of the teenage years, and for establishing healthy patterns for adult life. In New Zealand there have been significant improvements in young people's health over recent decades (Patton et al., 2009). New Zealand adolescents appear to be using less alcohol, less marijuana and less other substances than they were in recent years (Clark et al., 2013; Ministry of Health, 2013). However substance use remains a significant problem for a minority of students and it causes substantial personal, social and economic harm.

This report explores the health issues and contexts of New Zealand secondary school students who use substances at very high levels. The report is based on Youth'12: The national health and wellbeing survey of 8500 New Zealand secondary school students (Youth'12 survey). Young people who use substances more than their peers are likely to have high rates of absenteeism from school and may be early school leavers. Only students at school are included in the survey. It is important to remember that young people not at school may experience higher rates of difficulties.

The criteria for 'problem use' utilised in this report were developed from suggestions from the Ministry of Health, peer review within the Adolescent Health Research Group and consultation with youth health and alcohol and drug experts. In a clinical setting what constitutes 'problem use' will vary across individuals (e.g. for some persons any alcohol use is harmful). For the purposes of this report, we have used survey data to identify levels of substance use that are likely to cause current clinically significant problems. Students who use at or above these levels are identified as having 'very high' use or 'problem' use (both terms are used through the report to enhance readability). These criteria do not suggest that lower levels of substance use are not harmful. Indeed, even at considerably lower levels, substance use is risky and can cause harm. However the focus of this report is on exploring needs and issues for students with very high substance use as there may be specific needs and implications for this group.

The problem (very high) use criteria are different for students under the age of 16 and those 16 and older. This is because substance use at a younger age is particularly harmful. Students under the age of 16 met the criteria if they reported to do any of the following: drink alcohol several times a week or more, drink 5 or more alcoholic drinks in one session two or more times in the past 4 weeks, use marijuana once a week or more or use any other drugs on two or more occasions. Those aged 16 or over met criteria if they reported to do any of the following: drink alcohol most days a week or more, drink 5 or more alcoholic drinks in one session every week or more, use marijuana every day or more often or use other drugs on four or more occasions.

Key findings

- Overall 11% of high school students met the criteria for very high substance use. This included students right through the high school years (4% of those aged 13 or under and 15% of those aged 17 or over).
- Some demographic groups, for example Maori students and sexual minority students (e.g. same-sex attracted students) had higher rates of very high use than students not in those groups.
- Binge drinking was the most common form of very high substance use (8% of students under 16 and 12% of those 16 or over met this criterion). Less than 3% of students met the very high use criteria for frequently drinking alcohol or using marijuana or other substances. Comparatively few students (15.5% of those with very high use, and 1.7% of students overall) met the very high substance use criteria without also meeting the binge drinking criterion.

- Students with very high substance use reported more negative family experiences than other students did. Compared to other students they were:
 - Less likely to feel close with a parent, less likely to get enough time with a parent, less likely report a parent cares a lot and less likely to report that their family eats meals together.
 - More likely to live in more than one home and to move two or more times last year.
 - More likely to report substance use by their family and peers.
- Students with very high substance use more frequently reported witnessing and experiencing violence as well as experiencing sexual abuse compared to other students.
- Compared to other students, those with very high substance use reported more negative experiences across every dimension of schooling. They were less likely to 'like school', less likely to feel safe at school, less likely to plan to complete school and they were more likely to be bullied frequently.
- Compared to other students, those with very high use had poorer health and wellbeing across almost every area examined. They were more likely to:
 - Have had an injury that needed treatment.
 - Be overweight or obese.
 - Gamble.
 - Have been in trouble with the police in the last year (39% compared to 7%)
Have poor mental health (approximately double the rates of depressive symptoms, self-harm and serious thoughts of suicide).
 - Have had sex (68% compared to 18%) and, among those who had had sex, less likely to have used contraception.
 - Have risky driving experiences (46% driven dangerously by someone and 44% driven by someone who had been drinking in the last month, compared to 14% and 15% respectively for other students).
- Those with very high use had often had people tell them to cut down (24%) and many had tried to cut down or give up their use of alcohol (18%) or marijuana (36%). Sixty three percent reported that they had a problem because of their alcohol use (e.g. had an injury or had done something which could get them in serious trouble).
- Most of those with very high use had seen a healthcare professional in the last year (78% had been to a GP, medical centre or family doctor) and 5% had accessed an alcohol or drug service. However, even so, 30% reported they were unable to access healthcare when they needed it in the last 12 months. The most frequently endorsed barriers to accessing healthcare were 'not wanting to make a fuss' and 'hoping the health issue would go away on its own'.

Overall, these findings suggest that focusing on the needs of students with very high levels of substance use is justified. These students have high health needs and are at risk of multiple poor outcomes in the long and short term. There are opportunities to support these students, many have considered cutting down or reducing their substance use and most have adults in their lives that could assist them. The result of this report suggest that efforts to support students with very high substance use will need to be able to reach at least 11% of the high school population, will need consider students family and school contexts and will need to address multiple health, mental health and behavioural issues. We hope that these findings will be used to support the health and wellbeing of students in New Zealand and to reduce substance use related harm.

Key points

Approximately 11% of New Zealand high school students use substances at levels that are likely to cause them significant current harm and may cause long-term problems.

The most common form of problem substance use is binge drinking.

Students with very high substance use (including binge drinking) have more challenging family and school lives than others do. They have experienced more violence and face multiple health risks and challenges. In particular, they have more problems in areas of mental health, sexual health, risky driving and problem behaviour.

There are opportunities to support these students. Many are interesting in cutting down and most see adults who could have a role in supporting them; they have school and family connections, most have seen a GP in the last year and many have had contact with the police.

The findings suggest that the 11% of New Zealand high school students with very high substance use have important needs. Efforts to support them are required and such efforts must take into account the reality that many of these students face challenges across multiple aspects of their lives.



Introduction

Adolescent wellbeing is of critical importance, both for navigating the challenges of teenage years, and for establishing healthy patterns for adult life. In New Zealand there have been significant reductions in adolescent mortality (death) rates over recent decades (Patton et al., 2009). However, rates of preventable health problems among young people remain high compared to other developed nations (Office of the Prime Minister's Science Advisory Committee, 2011).

Young people, families, schools, communities and governments have made considerable efforts to improve adolescent health and wellbeing more generally.

This report provides an overview of the wellbeing of New Zealand secondary school students who report very high substance use.

This report has been produced by the Adolescent Health Research Group (AHRG), which carries out the Youth2000 Survey Series. It provides a summary or snapshot of important health and wellbeing issues for young people who use substances from the Youth'12: The national health and wellbeing survey of New Zealand secondary school students (Youth'12 survey). You can see more about the AHRG and the Youth2000 series on our website, www.youthresearch.auckland.ac.nz.

Defining Problem (Very High) Use

The Ministry of Health aims to support recovery and wellness and minimise the harm that addiction can cause. To support this they asked the Adolescent Health Research Group (AHRG) to provide data about secondary school students using substances in ways that are likely to be problematic. The Ministry suggested that this population be defined using variables relating to alcohol, marijuana, other substances use and binge drinking. They suggested that this population might be defined as those who have:

- Consumed alcohol several times a week, or on most days
- Consumed 3-4 standard drinks of alcohol on a usual drinking occasion which had occurred more than 4 times over the past 4 weeks.
- Used marijuana on a weekly basis, or more often
- Had used other substances four or more times

As the impact of substance use varies depending on an individual's stage of development, the AHRG created different criteria for students aged under 16 years and those who were 16 years or over. These criteria were then reviewed by experts in the field. Specifically, Terry Fleming and Terryann Clark identified an initial draft cut-off for the criteria based on clinical experience and research expertise. These were reviewed with leaders in adolescent substance use and mental health. We worked closely with Dr Grant Christie and the clinical team at Altered High Youth Service, Auckland Community Alcohol and Drug Services (CADS) to refine the criteria. Dr Christie is the clinical lead of Altered High and has extensive clinical and research experience in the youth addiction field. This review process resulted in the agreed criteria listed on the following page.

Table 1. Problem (Very high) use criteria.

	Problem (very high) use For those aged under 16	Problem (very high) use For those aged 16 or over
Alcohol frequency	Drink alcohol several times a week or more	Drink alcohol most days a week or more
Binge drinking alcohol	Drink 5 or more alcoholic drinks in one session two or more times in the past 4 weeks	Drink 5 or more alcoholic drinks in one session every week or more
Marijuana Use	Use marijuana once a week or more	Use marijuana every day, or more
Other Substance use	Have used any other drugs on two or more occasions	Have used any other drugs on four or more occasions
Problem (very high) use	<i>Any of the above</i>	<i>Any of the above</i>

It is recognised that the levels of substance use required to meet these criteria are high. These criteria do not suggest that lower use is not harmful. Indeed lower levels of use than this are risky and can be harmful. However the focus of this report is on understanding needs and issues for young people who use substances at levels which will typically be causing current harm and will likely require clinical intervention.

Throughout this report, the terms ‘problem use’ and ‘very high use’ refer to students who use substances at or above the age-specific criteria listed here.

The Adolescent Health Research Group (AHRG)

The Adolescent Health Research Group (AHRG) is a multidisciplinary team of researchers that is supported by youth, cultural, and stakeholder advisors. The purpose of the AHRG is to promote the healthy development and wellbeing of New Zealand youth through scientific research that delivers high quality, useable data. The group was first established in 1997. The AHRG has collected data about young people’s health and wellbeing from a total of 28,000 high school students since 2001. Over the years the membership of the AHRG has changed, but the vision and commitment remains. The AHRG works closely with many other researchers and groups. The AHRG welcome applications from others to use the Youth2000 survey series data. A protocol for potential collaborations can be found on our website.

Youth2000 Survey Series

The AHRG has carried out comprehensive national surveys of secondary school students in 2001 (Adolescent Health Research Group, 2003), 2007 (Adolescent Health Research Group, 2008) and now in 2012.

The group has also surveyed students in Alternative Education in 2000 (Adolescent Health Research Group, 2002) and 2009 (Clark et al., 2010). In 2007 the AHRG also surveyed students in Teen Parent Units (Johnson & Denny, 2007). In 2007 and 2012, our surveys of secondary school students were supplemented by surveys with school staff members about school characteristics. All of these surveys together make up the Youth2000 Survey Series.

The results of the Youth2000 Survey Series have been presented extensively, and are listed on our website www.youthresearch.auckland.ac.nz

How we did the Youth'12 Survey

The Youth2000 Surveys are designed to provide information about the health and wellbeing of New Zealand secondary school students. In 2012, we randomly selected 125 composite and secondary schools in New Zealand which met the inclusion criteria¹ and invited them to participate in the survey. For schools which had a roll of more than 150 Year 9–13 students, we randomly selected 20% of this roll and invited these students to take part in the survey. For participating schools with fewer than 150 Year 9–13 students, 30 students were randomly selected and invited to take part. For more detailed information on the school selection process, please refer to the *Youth'12 Prevalence Tables* report (Clark et al., 2013b).

Of the 125 schools invited, 91 took part in the survey (73%). The majority of participating schools were state funded, co-educational and large schools (at least 350 Year 9-13 students). Thirty-four schools chose not to participate. Twenty five of these schools were from main urban areas, 19 were state (not integrated) schools, 19 were co-educational, and 24 were large schools.

From the participating schools, 12,503 students were invited to take part in the survey and 8,500 participated (68%). This represents 3% of the 2012 New Zealand secondary school roll. The most common reasons why students did not participate were not being at school on the day of the survey, not wanting to take part, and being unavailable during the time the survey was conducted.

Ethical Issues

The Youth'12 survey built on the procedures used in the previous Youth2000 surveys. Like the previous surveys, Youth'12 was completely voluntary (schools and students did not have to participate and students could choose to not answer questions or to leave at any time) as well as anonymous (schools which participated are not named and no

student identification details were collected). The survey had a 'branching' design, so that students were not asked detailed questions about things that did not apply to them.

Before areas of the survey which might be particularly sensitive, reminders were given about the confidential nature of the survey and students were reminded that they could skip questions that they did not wish to answer. After sensitive questions and at the end of the survey, participants were encouraged to seek help if they had found questions upsetting and they were given options of how they might do this. Once they had completed the survey, all participants were given a wallet size thank you card. This included a message about seeking help with options of where they might find help from the research team, their school and their community.

The AHRG and a wide range of advisors reviewed the survey content and methods. Ethical approval was obtained from the University of Auckland Human Participants Ethics Committee (ref 2011/206).

School principals gave consent for their own school to take part. A few weeks before the survey, information was sent to each school for distribution to parents and students. Parents were able to have their child excluded from the survey. On the day of the survey, an explanation was given to selected students and each student personally consented to participate. The survey was available in English and te reo Māori.

Survey delivery and content

The survey was delivered using handheld internet tablets. The survey questions were displayed on the tablet and were also available on a voiceover via headphones. Students answered the questions by touching the appropriate checkbox on the tablet screen.

The Youth'12 survey covered important areas of health and wellbeing for young people in New Zealand, as well as risk and protective factors. The questionnaire contained a total of 608 questions,

¹ New Zealand registered composite and secondary schools with 50 or more students in Year 9 or higher.

but students answered fewer than this number of questions due to the branching design of the survey. The complete list of survey questions and full wording for each question is available on our website.

We also measured each student's height and weight. These measurements were taken in private, part way through the survey. At this time, students were asked to provide their usual home address. We used this to ascertain their census meshblock (grouping of approximately 100 households) so that neighbourhood characteristics such as deprivation levels and urban or rural setting could be ascertained. After the meshblock was identified, the student's address was deleted.

NZ Deprivation Index

In this report, students are grouped into high, medium, or low deprivation neighbourhoods, based on the New Zealand Deprivation Index for the meshblock (small neighbourhood area) in which they live. The New Zealand Deprivation Index is calculated from a range of variables from the 2006 census data for each meshblock. These variables include household income, employment, access to a telephone and car, single parent families, qualifications, overcrowding and home ownership. It is important to remember that this is an indicator of neighbourhood deprivation, rather than a measure of personal or family hardship; some families will face a level of hardship or deprivation quite different to the average of their meshblock.

How to use the information in this report

The Youth2000 Survey Series is the largest dataset on the health and wellbeing of young people in New Zealand and is of considerable importance for the purposes of planning and programme development for communities, schools and policymakers.

However, caution needs to be taken when interpreting the results, especially in relation to whether the findings reflect the wider youth

population and in interpreting differences between groups of students.

The sample of students surveyed does not include young people who were absent from school on the day of the survey, those who have left school, or those in Alternative Education settings. Hence, findings are likely to represent a slightly positive view of the health of students in schools.

Interpreting the Results

This report presents findings from the Youth'12 Survey carried out in 2012. When we report statistics in this document a number of parameters are provided.

In the tables, for each question/item from the survey we report 'N' which refers to the number of students who answered that particular question/item. The 'N' will vary by question, as students could choose not to answer questions, and students were not asked detailed questions which did not apply to them. For example, only students who had ever been in trouble with the police were asked what activity caused them to get into trouble with the police.

The 'n' refers to the number of students who chose the particular response of interest for a question/item. For example, in the question regarding whether students were unable to access healthcare, the number of students with problem use who answered this question was 884 (N) and 269 (n) of these students answered that 'yes' they were unable to access healthcare when they needed it in the last 12 months.

The percentage (%) refers to the proportion of the students who reported that particular response or behaviour for a question/item. This can be regarded as an estimate of the true proportion of the population. For example, 87.0% of students with problem use reported that their parents 'care about me a lot'.

The confidence interval (95% CI) indicates the precision of this estimate by providing an interval

lies (i.e. we are 95% confident that the actual prevalence of that particular behaviour or response lies between the two bounds given). Wide confidence intervals indicate more uncertainty in the associated percentage result. The percentages and confidence intervals are adjusted for weighting and clustering, because the Youth2000 Survey Series utilise a complex sampling design.

The percentages and confidence intervals were used to compare responses between students with very high use and those with lower use. As a 'rule of thumb', if the confidence intervals around two estimates do not overlap then the differences are more likely to be real or statistically significant. However, it is important not to place too much emphasis on apparent differences when the numbers of students reporting on a specific issue is small.

Sample sizes of students from specific groups may be small for rare behaviours. This means that small differences in numbers of students responding to a question a particular way can lead to large differences in the percentage reported. To reduce the chance of erroneous conclusions based on small numbers, data are presented in this report for important youth health issues and are not reported for experiences affecting fewer than 25 participants.

The 'p' value refers to the probability that the percentage reported by students with problem use is different from the percentage reported by students with lower use, once demographic differences between the two samples are taken into account (using logistic regression techniques). The demographic differences taken into account are student's sex, age, neighbourhood deprivation and ethnic group.

The lower the p value, the more likely it is that there are real differences between the two groups. If p is smaller than .001, there is less than 1 in 1,000 chance that that difference is not real; if p is .05, there is a 5% chance that that difference is not real. When we have conducted tests of statistical significance we have used a fairly conservative cut-off of $p \leq 0.05$ (i.e. there is less than a 5% chance

that there is a random difference between students who problem use and those who do not, therefore we can be very confident that the difference observed is real.

How reliable are these findings?

Some of the findings presented in this latest report in the Youth2000 Survey Series are contrary to the view of New Zealand youth often presented by media and other organisations. For example young people have reported a decline in alcohol, tobacco and illicit drug use in the Youth'12 survey, whereas many a media story, might suggest the opposite.

We have taken steps to ensure that we can be confident the information is correct. Our large sample size and rigorous methods for randomly selecting schools and students ensure that these findings represent secondary schools and their students throughout New Zealand. The Adolescent Health Research Group has undertaken extensive quality checks to ensure data coding and analyses are correct. We are not the only research team to report positive changes. Other recent New Zealand research also highlights positive developments.

For example:

- The 2011/12 New Zealand Health Survey (Ministry of Health, 2013) reported that overall fewer 15-17 year olds were drinking alcohol - significantly reduced from 75% in 2006/07 to 59% in 2011/12.
- A similar pattern was seen for smoking in the ASH year 10 surveys - with a reduction in daily smoking from 15.6% in 1999 to 4.1% in 2012 (ASH, 2012).
- Teen pregnancy has decreased significantly since 1971 with 7 births per 100 (15-19 years) to 2.8 births per 100 teenage women in 2011 (Families Commission, 2011).
- Motor vehicle crash deaths have reduced from 51 per 100,000 in the 1985-1989 period to 19 per 100,000 in the 2005-2009 period (15-24 years) (Ministry of Social Development, 2010).

Similarly, positive changes in youth substance use and risk behaviours have been reported in other developed nations. UNICEF recently reviewed child and youth wellbeing indicators across more than 29 'rich countries' (UNICEF, Office of Research, 2013). In all or almost all of these countries, youth alcohol use, tobacco use and marijuana use had reduced significantly over the last decade. Many nations have also had reductions in births to teenagers (Lawlor & Shaw, 2004) and fighting (Mulye et al., 2009; Pickett et al., 2013).

Because of the reliable methods used in the Youth2000 Survey Series, including large sample sizes and data checking, and the similar trends in other New Zealand and international research, we are confident that these findings are real and represent positive changes in many areas for secondary school students overall. Future analyses can investigate issues such as how much the reported changes have occurred in different population groups.



The Results

The Participants

Of the 8065 students who answered questions about substance use, just over 11% were classified as having very high use ('problem use') (criteria shown in Table 1). Students aged 16 and over and were more likely to report very high use than students aged 15 or under were. There were differences by other demographic criteria too; in particular, students who identified as Māori reported high rates of very high substance use.

Table 2. The participants

		Students with very high substance use		Students with lower levels of substance use	
		n / N	% (95% CI)	n / N	% (95% CI)
Total		890 / 8065	11.1 (9.8-12.4)	7175 / 8065	88.9 (87.6-90.2)
Sex	Female	434 / 4445	9.8 (8.5-11.0)	4011 / 4445	90.2 (89.0-91.5)
	Male	455 / 3618	12.6 (10.6-14.6)	3163 / 3618	87.4 (85.4-89.4)
Age	13 or under	77 / 1730	4.3 (3.2-5.4)	1653 / 1730	95.7 (94.6-96.8)
	14	163 / 1814	9.0 (7.3-10.7)	1651 / 1814	91.0 (89.3-92.7)
	15	258 / 1654	15.7 (13.3-18.1)	1396 / 1654	84.3 (81.9-86.7)
	16	190 / 1498	12.7 (10.2-15.1)	1308 / 1498	87.3 (85.2-89.4)
	17 or over	202 / 1369	14.8 (12.3-17.3)	1167 / 1369	85.2 (82.7-87.7)
Table 2 continues on the following page					
Age group	Under 16 years	498 / 5198	9.6 (8.4-10.8)	4700 / 5198	90.4 (89.2-91)
	16 or over	392 / 2867	13.7 (11.5-15.8)	2475 / 2867	86.3 (84.2-88.5)

Ethnicity¹	Māori	307 / 1566	19.6 (17.3-21.9)	1259 / 1566	80.4 (78.1-82.7)
	Pacific	90 / 1078	8.4 (6.5-10.3)	988 / 1078	91.6 (89.7-93.5)
	Asian	27 / 1004	2.7 (1.7-3.7)	977 / 1004	97.3 (96.3-98.3)
	European	420 / 3922	10.7 (9.4-12.1)	3502 / 3922	89.3 (87.0-90.6)
	Other	43 / 486	9.0 (6.3-11.6)	443 / 486	91.0 (88.4-93.7)
Neighbourhood deprivation²					
	Low deprivation	280 / 2654	10.6 (8.9-12.3)	2374 / 2654	89.4 (87.7-91.1)
	Medium deprivation	306 / 2888	10.6 (9.0-12.3)	2582 / 2888	89.4 (87.7-91.0)
	High deprivation	293 / 2433	12.0 (9.8-14.2)	2140 / 2433	88.0 (85.8-90.2)
Country / area of birth					
	New Zealand	763 / 6321	12.1 (10.8-13.4)	5549 / 6321	87.9 (86.6-89.2)
	Asia	13 / 440	2.9 (0.8-5.1)	427 / 440	97.1 (94.9-99.2)
	Pacific	17 / 301	5.5 (3.2-7.8)	284 / 301	94.5 (92.2-96.8)
	United Kingdom	16 / 207	7.8 (4.7-11.0)	191 / 207	92.2 (89.0-95.3)
	Australia	22 / 158	13.5 (7.6-19.3)	136 / 158	86.5 (80.7-92.4)
	Other	59 / 639	9.3 (6.7-11.9)	580 / 639	90.7 (88.1-93.3)

Notes:

¹ Using the New Zealand Census prioritisation method.

² Using New Zealand 2006 Census meshblock data (Salmond, Crampton, & Atkinson, 2007).

Problem use criteria

Just over 11% (11.1%) of all participants met the relevant age specific criteria for very high substance use (problem use). Binge drinking of alcohol was the most common form of problem use (7.7% of students under 16 and 11.9% of those 16 met this criterion), while less than 3% of students met any of the other criteria for problem substance use. Comparatively few students (15.5% of those with very high use, and 1.7% of students overall) met the very high substance use criteria without also meeting the binge drinking criterion.

Table 3. Overall summary of students meeting age-specific criteria for very high substance use

	Students with very high substance use (all ages)		Students aged under 16 with very high substance use		Students aged 16 or over, with very high substance use	
	n / N	% (95% CI)	n / N	% (95% CI)	n / N	% (95% CI)
By age group:	890 / 8065	11.1 (9.8-12.4)	498 / 5198	9.6 (8.4-10.8)	392 / 2867	13.7 (11.5-15.8)
Very high use criterion						
Alcohol frequency	124 / 8165	1.5 (1.2-1.8)	91 / 5279	1.7 (1.4-2.1)	33 / 2886	1.1 (0.8-1.5)
Binge drinking alcohol	751 / 8154	9.2 (8.1-10.3)	406 / 5268	7.7 (6.7-8.7)	345 / 2886	11.9 (10.0-13.9)
Marijuana use	180 / 8099	2.2 (1.7-2.7)	137 / 5223	2.6 (2.0-3.2)	43 / 2876	1.5 (1.0-2.0)
Other substance use	166 / 8111	2.1 (1.6-2.6)	101 / 5239	2.0 (1.5-2.4)	65 / 2872	2.4 (1.6-3.0)



Substance Use

Substance use by student

Students reporting very high substance use ('problem use') were much more likely to report smoking cigarettes and marijuana as well as drinking alcohol frequently and binge drinking than other students ($p < .0001$). Among all students, binge drinking was the most common form of substance use.

Table 4. Cigarette, alcohol and marijuana use by student

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Smoke cigarettes weekly or more	225 / 887	25.0 (21.6-28.4)	138 / 7165	1.9 (1.5-2.4)	<.0001
Use alcohol weekly or more	559 / 884	63.1 (59.0-67.3)	144 / 7175	2.0 (1.6-2.4)	<.0001
Binge drinking in last 4 weeks (5 or more alcoholic drinks in one session one or more times in the past 4 weeks)	818 / 887	92.1 (89.9-94.3)	1104 / 7175	15.4 (13.8-17.0)	<.0001
Weekly marijuana use	230 / 871	26.2 (22.4-30.1)	30 / 7175	0.4 (0.3-0.6)	<.0001

Use by friends and family

Students reporting very high substance use reported much higher rates of friends and their parents using substances than other students did ($p < .0001$).

Table 5. Substance use by friends and family

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Substances that students' friends use					
Cigarettes, tobacco	684 / 885	77.1 (72.9-81.4)	2267 / 7143	31.7 (29.5-34.0)	<.0001
Alcohol	820 / 885	92.8 (90.6-94.9)	3554 / 7143	49.8 (47.4-52.2)	<.0001
Marijuana	722 / 885	81.6 (78.7-84.5)	2052 / 7143	28.8 (26.6-30.9)	<.0001
Party pills and smokable products (excluding tobacco and cigarettes)	309 / 885	35.1 (31.0-39.2)	492 / 7143	6.9 (6.1-7.7)	<.0001
Other drugs that often cause a high	276 / 885	31.2 (27.1-35.4)	518 / 7143	7.3 (6.5-8.1)	<.0001
None of these	36 / 885	4.0 (2.4-5.6)	3226 / 7143	45.1 (42.6-47.5)	<.0001
Substances that students' parents use					
Cigarettes, tobacco	384 / 887	43.0 (38.7-47.3)	1836 / 7147	25.6 (23.1-28.2)	<.0001
Alcohol	649 / 887	73.3 (70.3-76.3)	4055 / 7147	56.9 (54.0-59.9)	<.0001
Marijuana	173 / 887	19.5 (17.2-21.8)	313 / 7147	4.4 (3.6-5.1)	<.0001
Party pills and smokable products (excluding tobacco and cigarettes)	21 / 887	2.3 (1.3-3.4)	22 / 7147	0.3 (0.2-0.4)	<.0001
Other drugs that often cause a high	24 / 887	2.7 (1.7-3.7)	28 / 7147	0.4 (0.2-0.5)	<.0001
None of these	144 / 887	16.3 (13.7-18.8)	2461 / 7147	34.3 (31.9-36.7)	<.0001

Usual source of alcohol

Among students who currently drink alcohol, most obtained their alcohol via friends and family. This was the case for both students with very high use and those with lower levels of use. Those with very high use were considerably more likely to buy alcohol themselves, to 'pinch it' or to have someone else buy it for them.

Table 6. Usual source of alcohol

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Current alcohol drinker	862 / 888	97.0 (95.9-98.1)	2790 / 7175	39.0 (35.9-42.0)	<.0001
I buy it myself	181 / 858	21.0 (17.6-24.4)	210 / 2779	7.6 (6.4-8.7)	<.0001
Friends give it to me	432 / 858	50.5 (46.7-54.2)	1153 / 2779	41.6 (39.0-44.1)	<.0001
My brother or sister gives it to me	193 / 858	22.5 (19.8-25.2)	507 / 2779	18.2 (16.3-20.1)	0.0547
My parents give it to me	212 / 858	24.8 (21.9-27.8)	911 / 2779	32.8 (30.4-35.2)	<.0001
My parents buy it for me	357 / 858	41.8 (38.4-45.2)	901 / 2779	32.4 (29.8-35.0)	<.0001
I take it from home without my parents' permission	85 / 858	9.9 (7.7-12.0)	167 / 2779	6.0 (5.0-7.1)	<.0001
I get it from home with my parents' permission	179 / 858	20.9 (18.2-23.5)	718 / 2779	25.9 (24.0-27.8)	0.0009
Another adult I know gives it to me	147 / 858	17.2 (14.2-20.2)	290 / 2779	10.5 (9.0-11.9)	<.0001
I get someone else to buy it for me	392 / 858	45.7 (42.5-48.9)	692 / 2779	25.0 (22.9-27.0)	<.0001
I pinch it	52 / 858	6.1 (4.4-7.7)	52 / 2779	1.9 (1.4-2.4)	<.0001
None of these	6 / 858	0.7 (0.1-1.03)	82 / 2779	3.0 (2.2-3.7)	0.0009

Issues related to using alcohol

Students who reported that they drink alcohol were asked if their friends or family had told them to cut down or if they had experienced any of the problems listed in Table 7 because of drinking alcohol. Students reporting very high use were more likely to have experienced each one of these issues than other students. Overall, 63.0% of those with very high use reported that they had had at least one of these problematic consequences from drinking.

Table 7. Student reported problems because of using alcohol

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Friends or family told them to cut down	196 / 822	23.8 (20.9-26.7)	188 / 2768	6.8 (5.7-7.9)	<.0001
Performance at school or work was affected	119 / 822	14.4 (11.6-17.2)	93 / 2768	3.3 (2.5-4.1)	<.0001
Had unsafe sex (no condom)	211 / 822	25.5 (21.9-29.1)	210 / 2768	7.6 (6.6-8.6)	<.0001
Had unwanted sex	84 / 822	10.1 (7.8-12.4)	82 / 2768	3.0 (2.3-3.6)	<.0001
Did things that could have got them into serious trouble (e.g. stealing etc.)	258 / 822	31.3 (28.3-34.3)	200 / 2768	7.2 (6.1-8.3)	<.0001
Was injured	270 / 822	32.9 (29.1-36.7)	283 / 2768	10.3 (8.9-11.7)	<.0001
Was injured and needed treatment by doctor of nurse	69 / 822	8.4 (6.6-10.1)	40 / 2768	1.4 (0.9-2.0)	<.0001
Hurt someone else	105 / 822	12.7 (10.6-14.8)	59 / 2768	2.1 (1.5-2.7)	<.0001
Had a car crash when drinking	34 / 822	4.1 (2.8-5.4)	18 / 2768	0.7 (0.3-1.0)	<.0001
Any of the above problems related to alcohol use	517 / 822	63.0 (59.2-66.7)	636 / 2768	23.0 (21.2-24.7)	<.0001

Students worried about alcohol or marijuana use

Of the students who reported currently drinking alcohol or using marijuana, many reported that they had worried about their use or that they had tried to cut down. Nearly a third of the students reporting very high use had worried about their alcohol use, a third had worried about their marijuana use and many tried to cut down or give up.

Table 8. Worried about own alcohol or marijuana use or have tried to cut down¹

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Alcohol					
Current alcohol drinker	862 / 888	97.0 (95.9-98.1)	2790 / 7175	39.0 (35.9-42.0)	<.0001
Worried about how much they drink	257 / 858	30.0 (26.1-33.9)	394 / 2784	14.1 (12.0-16.3)	0.0918
Ever tried to cut down or give up drinking	153 / 857	17.7 (14.1-21.4)	320 / 2774	11.5 (9.5-13.5)	0.1288
Marijuana					
Currently use marijuana	503 / 874	57.6 (53.8-61.4)	534 / 7175	7.4 (6.7-8.2)	<.0001
Worried about how much marijuana they use	168 / 499	33.6 (29.7-37.4)	129 / 532	23.9 (19.3-28.5)	0.1544
Ever tried to cut down or give up marijuana use	179 / 496	35.9 (31.5-40.3)	166 / 533	31.0 (26.4-35.5)	0.158

Notes:

¹Defined as worry a lot, some, a little about their alcohol or marijuana use

Health and Wellbeing

Overall health and access to healthcare

Adolescence is generally a stage of life that is associated with good health and the majority of adolescent health problems are preventable (Viner et al., 2012).

Students with high substance use were less likely to report good, very good or excellent health ($p < .0001$) and more likely to report having an ongoing health problem or condition ($p < .05$) than other students were.

Table 9. Overall health and access to healthcare

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Health is good, very good or excellent	751 / 888	84.5 (81.7-87.4)	6609 / 7173	92.1 (91.2-93.0)	<.0001
Ongoing health problem or condition ¹	217 / 886	24.6 (21.5-27.6)	1406 / 7170	19.6 (18.4-20.7)	0.025
Ongoing disability ²	78 / 882	8.8 (6.6-11.0)	641 / 7170	8.9 (8.2-9.6)	0.8091
Received any healthcare in the last 12 months	738 / 887	83.6 (80.7-86.4)	5644 / 7162	78.8 (77.2-80.5)	0.0076
Seen health professional for an emotional worry in last 12 months	250 / 881	28.4 (24.9-31.9)	1186 / 7152	16.6 (15.2-18.0)	<.0001
Received dental healthcare within the last 2 years	765 / 826	92.6 (91.0-94.3)	6322 / 6672	94.8 (93.7-95.8)	0.0656

Notes:

¹ A health problem or condition lasting 6 months or more (e.g. asthma, diabetes, depression).

² A disability lasting 6 months or more (e.g. impaired hearing, in a wheelchair, learning difficulties).

Place where students usually go for healthcare

Visiting a family doctor, medical centre or GP was the most common place to go for healthcare among all students.

Table 10. Place where students usually go for healthcare

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	P ¹
Family doctor, medical centre or GP clinic	708 / 883	80.4 (77.9-82.8)	6195 / 7157	86.6 (85.4-87.8)	<.0001
School health clinic	39 / 883	4.4 (2.8-6.1)	184 / 7157	2.6 (2.0-3.2)	
After hours A&E or 24 hour A&M	26 / 883	2.9 (1.6-4.2)	132 / 7157	1.9 (1.4-2.3)	
Hospital A&E	40 / 883	4.5 (3.1-5.8)	262 / 7157	3.6 (2.9-4.3)	
Youth centre / One stop shop	9 / 883	1.0 (0.2-0.4)	10 / 7157	0.1 (0.0-0.2)	
Traditional healer	6 / 883	0.7 (0.1-1.3)	21 / 7157	0.3 (0.2-0.4)	
Alternative health worker	10 / 883	1.1 (0.4-1.9)	54 / 7157	0.8 (0.6-1.0)	
Other	9 / 883	0.9 (0.3-1.6)	78 / 7157	1.1 (0.8-1.4)	
I don't go anywhere for healthcare	36 / 883	4.0 (2.7-5.4)	221 / 7157	3.1 (2.6-3.5)	

Notes:

¹ The p value indicates that the distribution of usual healthcare places is not the same between students with problem use and other students. The question that relates to Table 10 permitted students to select only one place that they usually go for healthcare from a list of options (which make up the items in Table 10). The nature of this style of question means that the items in this table are not independent, rather they are mutually exclusive. Therefore significance testing could not be carried out for each individual item but only for all items.

Healthcare services accessed in the last 12 months

Over 70% of all students reported that they had visited their family doctor, medical centre or GP in the last 12 months. Students reporting very high substance use utilised after hours services, school health clinics and family planning or sexual health services more than other students did.

Table 11. Healthcare services accessed in the last 12 months

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Family doctor, medical centre or GP clinic	684 / 887	77.6 (74.5-80.8)	5307 / 7157	74.2 (72.4-76.0)	0.0839
After hours A&E or 24 hour A&M	171 / 887	19.4 (15.4-23.5)	985 / 7157	13.8 (11.8-15.9)	<.0001
Hospital A&E	201 / 887	22.7 (18.9-26.5)	1084 / 7157	15.2 (13.7-16.6)	0.0007
School health clinic	208 / 887	23.7 (19.1-28.2)	1236 / 7157	17.4 (14.3-20.5)	<.0001
Family planning or sexual health clinic	129 / 887	14.6 (11.7-17.5)	224 / 7157	3.2 (2.6-3.7)	<.0001
Alternative health worker	42 / 887	4.8 (3.1-6.4)	237 / 7157	3.3 (2.7-4.0)	0.015
Chemist or pharmacy	272 / 887	30.7 (26.9-34.6)	2116 / 7157	29.6 (27.0-32.3)	0.8651
Alcohol or drug service	42 / 887	4.8 (3.4-6.2)	18 / 7157	0.2 (0.1-0.3)	0.3719

Experienced difficulty getting help for health issues

Students reporting very high substance use were more likely to have experienced difficulty getting help for some health issues, this was particularly the case for sensitive health issues.

Table 12. Experienced difficulty getting help with a health issue

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Type of health issue that student had trouble getting help for					
An injury/accident	136 / 840	16.3 (13.2-19.5)	735 / 6869	10.7 (9.5-12.0)	<.0001
Help with stopping smoking	87 / 840	10.4 (8.4-12.4)	64 / 6869	0.9 (0.6-1.3)	<.0001
Help with stopping drug or alcohol use	82 / 840	9.8 (8.0-11.7)	52 / 6869	0.8 (0.5-1.0)	<.0001
A long-term health condition. e.g. Asthma	22 / 840	2.6 (1.6-3.7)	141 / 6869	2.0 (1.7-2.4)	0.1854
A condition that does not last very long e.g. a cold	68 / 840	8.1 (6.0-10.2)	484 / 6869	7.1 (6.4-7.7)	0.1185
Contraception/sexual health	98 / 840	11.7 (9.4-14.0)	185 / 6869	2.7 (2.2-3.2)	<.0001
An emotional worry	134 / 840	15.8 (13.1-18.5)	712 / 6869	10.4 (9.3-11.4)	<.0001
Pregnancy or pregnancy test	71 / 840	8.4 (6.2-10.5)	111 / 6869	1.6 (1.2-2.0)	<.0001
Something else	82 / 840	9.6 (7.6-11.7)	389 / 6869	5.7 (4.9-6.5)	<.0001
I haven't had difficulty getting help	430 / 840	51.3 (47.9-54.7)	4833 / 6869	70.3 (68.5-72.2)	<.0001

Problems with accessing healthcare services

The reasons for being unable to access healthcare services were similar among students reporting very high substance use and those reporting lower levels of use. For both groups, 'not wanting to make a fuss' or 'hoping the problem would go away' were the most frequently endorsed reasons from the options given in the survey.

Table 13. Problems with accessing healthcare services

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Unable to access healthcare when needed it in last 12 months	269 / 884	30.3 (26.7-33.8)	1210 / 7163	16.9 (15.8-17.9)	<.0001
Reasons for being unable to access healthcare services					
I didn't know how to (e.g. you didn't know where to go or who to call for help or advice)	61 / 262	23.1 (18.2-27.9)	263 / 1170	22.7 (19.9-25.4)	0.9908
I had no transport to get there	79 / 262	30.0 (24.0-36.0)	319 / 1170	27.2 (24.8-29.6)	0.7896
I couldn't get an appointment (e.g. the appointment times or service opening hours were not convenient)	52 / 262	20.0 (14.8-25.1)	198 / 1170	17.0 (14.6-19.4)	0.6037
I couldn't get in touch with the health professional or the person I usually see	36 / 262	13.9 (10.2-17.6)	143 / 1170	12.2 (10.4-14.1)	0.7843
I didn't want to make a fuss	135 / 262	51.6 (45.2-58.0)	540 / 1170	46.0 (42.7-49.2)	0.1011
I couldn't be bothered	102 / 262	38.9 (32.6-45.2)	284 / 1170	24.4 (21.9-26.8)	<.0001
I didn't feel comfortable with the person	50 / 262	19.3 (13.3-25.3)	179 / 1170	15.3 (12.9-17.7)	0.1741
The staff were unfriendly	14 / 262	5.4 (2.6-8.2)	32 / 1170	2.7 (1.8-3.7)	0.0204
I was too scared	81 / 262	30.8 (25.4-36.2)	304 / 1170	26.0 (23.1-28.9)	0.0872
I was too embarrassed	90 / 262	34.4 (28.4-40.4)	339 / 1170	29.0 (26.2-31.8)	0.092
Table continued on following page					

Table 13 continued					
I was hoping that the problem would go away or get better with time	129 / 262	49.0 (42.9-55.1)	605 / 1170	51.6 (48.0-55.3)	0.5556
I was worried it wouldn't be kept private	52 / 262	19.6 (13.9-25.3)	195 / 1170	16.8 (14.7-18.8)	0.5333
I had no one else to go with	57 / 262	21.6 (16.3-26.8)	194 / 1170	16.6 (14.4-18.9)	0.0846

Eating, exercise and activities

A range of physical activities and interests are important for physical health and for supporting the development of healthy, confident and skilled young people (Breinbauer & Maddaleno 2005).

Compared to students with lower levels of substance use, those with very high use were more likely to be overweight or obese ($p < .005$) and more likely to have eaten takeaways four or more times in the last week ($p < .0001$). Students with very high use were also more likely to report doing 60 minutes or more of physical activity per day than their counterparts were ($p < .005$).

Table 14. Eating, exercise and activities

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Overweight or obese	372 / 877	42.3 (38.4-46.1)	2486 / 7075	35.2 (31.7-38.7)	0.0011
Worried about weight	541 / 887	60.9 (56.9-64.9)	4332 / 7153	60.6 (57.7-63.4)	0.0229
Eaten takeaways four or more times in the last week	190 / 876	21.6 (18.0-25.2)	812 / 7129	11.4 (8.8-14.1)	<.0001
60 minutes or more of physical activity daily	112 / 876	12.8 (10.6-15.0)	637 / 7088	9.0 (8.2-9.8)	0.0030
Play computer games or other electronic games for an hour or more each day	359 / 856	42.0 (38.4-45.7)	2687 / 7037	38.2 (34.9-41.6)	0.1660
Watch TV for an hour or more each day	591 / 856	69.1 (66.2-71.9)	4493 / 7037	63.9 (61.5-66.3)	0.0356
Do music, arts, dance or drama for an hour or more each day	236 / 856	27.6 (23.7-31.5)	2189 / 7037	31.1 (28.9-33.3)	0.0708

Injuries and Violence

Cause of injury that required treatment in the last 12 months

Students reporting very high substance use were more likely to have seen a healthcare professional due to an injury than other students. This was particularly so for injuries caused by self-harm ($p < .0001$), an assault ($p < .0001$) or by nearly drowning ($p < .0001$).

Table 15. Cause of injury that required treatment in the last 12 months

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Had an injury in the last 12 months that resulted in needing to see a doctor, nurse or physiotherapist	604 / 884	68.6 (64.4-72.7)	3910 / 7165	54.6 (52.7-56.6)	<.0001
Cause of injury					
Attempt to self-harm	67 / 601	11.0 (8.3-13.7)	110 / 3889	2.8 (2.2-3.5)	<.0001
Sport or recreation related	389 / 601	65.3 (60.4-70.1)	2665 / 3889	68.6 (66.2-71.0)	0.0135
Fall	200 / 601	33.2 (28.3-38.1)	1280 / 3889	32.8 (31.1-34.5)	0.2762
Road traffic crash	47 / 601	7.9 (5.1-10.8)	237 / 3889	6.1 (5.3-6.8)	0.4292
Assault	60 / 601	10.0 (7.4-12.7)	105 / 3889	2.7 (2.1-3.2)	<.0001
Work related injury	42 / 601	7.0 (3.9-10.0)	121 / 3889	3.1 (2.4-3.7)	0.0654
Near drowning	18 / 601	3.0 (1.5-4.5)	35 / 3889	0.9 (0.6-1.3)	<.0001
Other	151 / 601	25.1 (21.5-28.6)	961 / 3889	24.7 (23.1-26.4)	0.3033

Driving injuries

Motor vehicle crashes are the leading cause of death among young people in New Zealand (Clark et al, 2009).

High proportions of students with very high substance use reported being involved in risky driving. Compared to others, students reporting very high substance use were less likely to always wear a seatbelt ($p < .0001$), more likely to be driven dangerously by someone ($p < .0001$) and considerably more likely to have been driven by someone who had been drinking alcohol ($p < .0001$).

Table 16. Driving injuries

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Always wears a seatbelt when driving or being driven in a car	466 / 888	52.8 (49.1-56.5)	5516 / 7173	77.0 (75.0-78.9)	<.0001
Driven dangerously by someone in the last month (e.g. speeding, car chases, burnouts)	406 / 885	45.7 (42.1-49.3)	1006 / 7148	14.1 (13.1-15.1)	<.0001
Driven in the last month by someone who had been drinking alcohol	391 / 885	44.1 (40.7-47.4)	1089 / 7148	15.2 (14.0-16.5)	<.0001

Personal violence

Violence, including witnessing violence, is associated with a range of poor health outcomes for young people (Clark et al, 2009).

It was common for students reporting very high levels of substance use to have witnessed or directly experienced violence or sexual abuse.

Table 17. Personal violence

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Witnessed adults in your home hitting or physically hurting a child (other than yourself) in the last 12 months	159 / 857	18.7 (16.0-21.4)	901 / 6956	12.9 (11.4-14.5)	<.0001
Witnessed adults in your home hitting or physically hurting each other in the last 12 months	104 / 862	12.1 (10.0-14.2)	458 / 6969	6.6 (5.7-7.5)	<.0001
Hit or physically harmed by someone in the last 12 months (including by an adult in their own home) ¹	430 / 886	48.5 (45.0-51.9)	2229 / 7167	31.1 (29.4-32.8)	<.0001
Experienced sexual abuse or coercion (ever been touched or made to do sexual things you didn't want to do)	200 / 854	23.1 (19.7-26.6)	947 / 6980	13.6 (12.5-14.6)	<.0001

Note:

¹ This combines being hit or physically harmed by any person and/or by an adult at home.

Emotional Wellbeing

Emotional wellbeing is an important component of health. Students who feel happy and able to cope with problems generally have a greater capacity to do well at school, to enjoy life and to contribute to their families and communities. Emotional distress and suicidal behaviours are often under-recognised in adolescents and cause considerable harm; yet these are issues that can be addressed (Merry & Stasiak, 2011).

Students with very high substance use generally had poorer mental health than other students did. In particular rates of depression, self-harm and serious suicidal thoughts were markedly elevated among students with very high substance use.

Table 18. Emotional wellbeing

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Satisfied with life (it's OK, very happy or satisfied)	740 / 883	83.8 (80.9-86.8)	6646 / 7165	92.7 (92.0-93.5)	<.0001
Good emotional wellbeing based on WHO-5 Wellbeing Scale	566 / 874	64.6 (60.4-68.9)	5502 / 7083	77.7 (76.3-79.0)	<.0001
Overall, have difficulties in emotions, concentration, behaviour or ability to get on with others	527 / 886	59.5 (55.7-63.4)	3440 / 7151	48.1 (46.4-49.9)	<.0001
Worry a lot (certainly true about me)	189 / 859	21.8 (17.9-25.8)	1548 / 7022	22.1 (20.5-23.7)	0.9455
Clinically significant depressive symptoms ¹	186 / 844	22.0 (17.6-26.3)	812 / 7037	11.5 (10.6-12.5)	<.0001
Feeling down or depressed most of the day for at least 2 weeks in a row during the last 12 months.	398 / 886	44.8 (40.3-49.3)	2092 / 7151	29.3 (27.9-30.7)	<.0001
Deliberate self-harm	372 / 884	41.9 (37.0)	1558 / 7155	21.8 (20.5-23.1)	<.0001
Serious thoughts of suicide	265 / 879	30.0 (25.5-34.4)	1005 / 7127	14.1 (12.9-15.3)	<.0001

Notes:

¹ Defined by scoring over 28 on the RADS - Reynolds Adolescent Depression Scale (Short Form) (Clark et al., 2013b)

Sexual Health

Sexuality, gender identity and sexual health

Adolescence is the period of life when most people begin to experience strong romantic attractions and sexual feelings (Breinbauer & Maddaleno, 2005).

The majority of students reporting very high substance use reported that they were sexually active; this was a marked difference from students with lower levels of use.

Table 19. Sexual health

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Ever had sex ¹	604 / 889	67.9 (64.8-71.0)	1311 / 7155	18.4 (16.9-19.8)	<.0001
Use contraception to protect against pregnancy all of the time ²	301 / 581	52.0 (47.4-56.6)	758 / 1265	60.0 (55.9-64.1)	0.0034
Use condoms as protection against sexually transmitted disease or infection all of the time ²	268 / 593	45.5 (41.8-49.3)	619 / 1273	48.7 (45.2-52.2)	0.0165

Notes:

¹ Does not include sexual abuse

² Among those who have had sex

Gender identity and sexual orientation

Students with problem use were more likely to report being transgender or being attracted to the same or both sexes, than students with lower levels of substance use.

Table 20. Gender identity and sexual orientation

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	P
Gender identity					
Identify as transgender ¹	22 / 883	2.4 (1.4-3.5)	68 / 7135	0.9 (0.7-1.2)	0.0005
Not sure about gender identity	19 / 883	2.1 (1.1-3.1)	177 / 7135	2.5 (2.1-2.9)	0.7609
Sexual attraction					
Attracted to the opposite sex	777 / 872	89.4 (87.2-91.5)	6376 / 6975	91.5 (90.4-92.6)	<.0001 ²
Attracted to the same or both sex	76 / 872	8.5 (6.7-10.3)	282 / 6975	4.0 (3.6-4.5)	
Not sure or attracted to neither sex	19 / 872	2.1 (1.0-3.2)	317 / 6975	4.5 (3.7-5.3)	

Notes:

¹ Transgender was defined as a girl who feels like she should have been a boy, or a boy who feels like he should have been a girl (e.g. trans, queen, fa'afafine, whakawahine, tangata ira tane, genderqueer).

² The p value indicates that the distribution of sexual attraction is not the same between students with problem use and other students. The question that relates to the sexual attraction component of Table 20 permitted students to select only one of the three options for the sex that they are sexually attracted to. The nature of this style of question means that the items in this section of the table are not independent, rather they are mutually exclusive. Therefore significance testing could not be carried out for each individual item but only for all items.

Home and Families

Family relationships

Caring, supportive and safe families are critically important for young people. Overall, young people who report caring and supportive family relationships are happier, healthier and get on better in life (McLaren, 2002; Resnick, Harris, & Blum, 1993).

Participants reporting very high substance use had statistically significant worse results for every item which measured the strength of their family relationships compared to other participants.

Table 21. Family relationships

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
At least one parent (or person who acts as a parent) cares about them a lot	761 / 875	87.0 (84.5-89.4)	6655 / 7088	93.9 (93.2-94.6)	<.0001
Feeling close to at least one parent (or person who acts as a parent)	595 / 883	67.5 (64.0-71.0)	5676 / 7163	79.3 (77.8-80.8)	<.0001
Family ate meals together five or more times in the last 7 days	430 / 886	48.6 (45.5-51.7)	4590 / 7157	64.2 (62.7-65.7)	<.0001
Mostly get enough time with at least one parent (or person who acts as parent)	410 / 879	46.8 (42.1-51.4)	4287 / 7143	60.0 (58.2-61.8)	<.0001

Home circumstances

Students reporting very high levels of substance use were more likely to have lived in more than one household and were more likely to have moved home two or more times in the last year than other students were.

Table 22. Home circumstances

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Student lives in more than one home	376 / 889	42.4 (39.0-45.7)	1949 / 7173	27.2 (25.8-28.6)	<.0001
Household crowding	43 / 889	4.8 (3.0-6.6)	372 / 7168	5.2 (3.2-7.2)	0.8409
Parents often or always worry about not having enough money for food	125 / 861	14.5 (11.6-17.4)	742 / 6738	11.0 (9.2-12.8)	0.0219
Neither parent working	31 / 858	3.7 (2.2-5.3)	157 / 7002	2.2 (1.5-2.9)	0.0244
Moved home 2 or more times in the last 12 months	108	12.1 (9.8-14.3)	454 / 7170	6.3 (5.6-7.0)	<.0001

School

Schools are critical for the health and wellbeing of young people. Effective learning environments, adults having high expectations of students, adults providing appropriate and caring relationships for students, safe school environments and opportunities for meaningful participation in school life are all important predictors of good outcomes for teenagers (Bernat & Resnick, 2006; Resnick, 2000).

Students with very high substance use were more likely to report negative school experiences across every item measured than other students were.

Table 23. School

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Do not like school	214 / 889	23.9 (21.1-26.8)	573 / 7174	8.0 (7.0-9.0)	<.0001
Feel safe at school (all or most of the time)	706 / 889	79.3 (76.3-82.4)	6300 / 7171	87.8 (86.2-89.4)	<.0001
Bullied at school weekly or more often	79 / 886	8.9 (6.6-11.2)	415 / 7147	5.8 (5.1-6.5)	0.0003
Student plans to complete school (i.e., finish Year 13)	653 / 889	73.7 (70.6-76.9)	6405 / 7161	89.5 (88.4-90.6)	<.0001
Student plans to go on to work after finishing school	307 / 889	34.3 (30.5-38.1)	1622 / 7164	22.6 (20.5-24.6)	<.0001
Student plans to go on to further education after finishing school	468 / 889	52.9 (49.3-56.5)	4775 / 7164	66.8 (64.7-68.9)	<.0001
Important to their parents that they attend school	853 / 888	96.1 (94.7-97.5)	7128 / 7173	99.4 (99.2-99.6)	<.0001

Community and Contribution

Community and contribution

About half of all students reported feeling safe in their neighbourhood all the time. Compared to other students, students with problem use were more likely to have paid employment. They were less likely than other students to report that their spiritual beliefs or religious faith were very important to them.

Table 24. Community and contribution

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Feel safe in the neighbourhood all the time	479 / 832	57.5 (54.3-60.7)	3766 / 6982	53.9 (52.0-55.8)	0.1113
Have an adult outside their family who they would feel OK talking to about a serious problem	547 / 847	64.6 (61.1-68.2)	4137 / 7097	58.3 (56.7-59.9)	0.0226
Any paid employment in the last 12 months	553 / 874	63.3 (58.8-67.7)	3299 / 7103	46.4 (42.8-50.1)	<.0001
Spiritual beliefs or religious faith is very important to student	155 / 846	18.2 (15.0-21.4)	2058 / 7048	29.1 (24.4-33.8)	<.0001

Trouble with the police

Compared with other students, students with high levels of substance use were significantly more likely to have been in trouble with the police in the last 12 months ($p < .0001$). The reasons for being in trouble with the police differed between the two groups.

Table 25. Trouble with the police

	Students with very high substance use		Students with lower levels of substance use		
	n / N	% (95% CI)	n / N	% (95% CI)	p
Been in trouble with the police in the last 12 months	334 / 853	39.3 (35.9-42.7)	524 / 7121	7.3 (6.4-8.2)	<.0001
Cause of negative police involvement with police in the last 12 months of students who had been in trouble with the police					
Taking a car	36 / 330	10.8 (8.0-13.6)	15 / 519	2.8 (1.3-4.3)	<.0001
Stealing	87 / 330	26.2 (21.3-31.1)	83 / 519	15.8 (12.4-19.2)	0.0018
Tagging	53 / 330	15.8 (11.6-20.1)	34 / 519	6.4 (4.0-8.8)	<.0001
Fighting	100 / 330	29.9 (24.7-35.1)	80 / 519	15.5 (12.0-18.9)	<.0001
Something to do with driving	69 / 330	20.9 (16.6-25.2)	78 / 519	15.1 (11.9-18.4)	0.117
Something to do with drugs	76 / 330	23.1 (17.3-28.8)	30 / 519	5.7 (3.7-7.6)	<.0001
Damaging property	64 / 330	19.7 (15.1-24.4)	45 / 519	8.6 (6.6-10.6)	<.0001
Being in a gang	30 / 330	8.8 (5.3-12.3)	16 / 519	3.1 (1.6-4.5)	<.0001
Running away from home	47 / 330	14.0 (9.8-18.1)	38 / 519	7.2 (4.8-9.6)	0.0028
None of these	75 / 330	22.7 (18.2-27.3)	204 / 519	39.3 (35.4-43.3)	<.0001

Gambling

Compared with students with lower levels of substance use, a significantly larger proportion of students with problem use reported that they gambled in the last 12 months ($p < .0001$). Of all the students who gambled in the last 12 months, students with problem use were more likely than others to gamble \$20 or more per week and gamble for 30 minutes or more per day.

Table 26. Gambling

	Students with very high substance use		Students with lower levels of substance use		
	n	% (95% CI)	n	% (95% CI)	p
Have gambled in the last 12 months	272 / 806	33.4 (30.1-36.7)	1602 / 6929	23.2 (22.0-24.4)	<.0001
Among the students who have gambled in the last 12 months					
Gamble \$ 20 or more a week	27 / 270	9.9 (5.9-14.0)	35 / 1596	2.2 (1.5-2.9)	<.0001
Gamble for 30 mins or more a day	17 / 268	6.0 (3.1-8.9)	25 / 1594	1.6 (0.9-2.2)	0.0002

Māori Students

Demographic profile of Māori students (only) and problem substance use

Of the 1566 Māori students who answered questions about substance use, close to one fifth met the criteria for problem use.

Table 27. Demographic profile of Māori students and problem substance use

		Students with very high substance use		Students with lower levels of substance use	
		n / N	% (95% CI)	n / N	% (95% CI)
Total		307 / 1566	19.6 (17.3-21.9)	1259 / 1566	80.4 78.1-82.7
Sex	Female	160	19.0 (15.8-22.1)	680	81.0 (77.9-84.2)
	Male	146 / 725	20.2 (17.4-23.0)	579 / 725	79.8 (77.0-82.6)
Age	13 or under	41 / 382	10.4 (7.2-13.5)	341 / 382	89.6 (86.5-92.8)
	14	86 / 397	21.9 (18.0-25.7)	311 / 397	78.1 (74.3-82.0)
	15	81 / 323	25.3 (19.9-30.7)	242 / 323	74.7 (69.3-80.1)
	16	51 / 258	19.8 (14.1-25.5)	207 / 258	80.2 (74.5-85.9)
	17 or over	48 / 206	23.1 (16.5-29.8)	158 / 206	76.9 (70.2-83.5)
Neighbourhood deprivation²	Low deprivation	54 / 317	17.1 (12.9-21.3)	263 / 317	82.9 (78.7-87.1)
	Medium deprivation	98 / 543	18.1 (14.7-21.5)	445 / 543	81.9 (78.5-85.3)
	High deprivation	152 / 689	22.0 (18.2-25.8)	537 / 689	78.0 (74.2-81.8)

Notes:

¹ Using New Zealand 2006 Census meshblock data (Salmond, Crampton, & Atkinson, 2007).

Problem use among Māori students and associations with cultural factors

Among all Māori students, the majority (71.3%) reported that they were very proud to be Māori, with younger students more frequently reporting ethnic pride than older students. There is also an increasing trend for Māori students to know their iwi in 2012 (76.6%) compared to 2001 (60.3%). The increasing pride and participation in Māori culture are important indicators of wellbeing for Māori students, and are associated with major reductions in substance use over the past 11 years. Since 2001 there has been a 41% reduction in weekly marijuana use, 46% reduction in weekly or more frequent alcohol use, 70% reduction in 'other drug' use and 66% reduction in weekly or more frequent cigarette use (Crengle et al., 2013).

However, when looking at the associations between Māori youth with very high substance use and selected cultural factors, the Youth'12 results did not reflect this overall positive trend and operated in a manner that is counter-intuitive to many who work with Māori youth. Those who reported they could speak te reo Māori fairly well, well or very well (students with very high levels of use 37.4% compared to 27.8% students with lower levels of use; $p < .001$) and understand spoken Māori fairly well, well or very well (53.1% students with very high levels of use compared other students 42.2%; $p < .001$) more frequently reported problem substance use. Similar trends were seen for knowing their iwi (tribal grouping) (81.7% for students with very high levels of use compared to 75.3% for students with lower levels of use; $p = 0.0216$).

It is important to remember that most Māori youth do not have problematic substance use. These findings should be interpreted with caution, as they are not causal. Rather they are associations and we do not understand how these complex factors interact. Our cultural and social indicators of wellbeing may not adequately measure these factors in this study and there may be other factors at play that mediate these factors that we do not understand. This will require more qualitative methodologies to explore further. It is also possible that the associations between te reo Māori, iwi identification and problematic substance use reflect the negative environments, racism and discrimination that some Māori youth experience. Over half reported that they are comfortable in Pākehā/NZ European social surroundings, but this also suggests that there are a large proportion of Māori youth who feel uncomfortable in mainstream Pākehā society. In addition, findings from the 2007 survey found that Māori youth reported over twice the odds (Odds Ratio 2.41) of ethnic discrimination by health professionals compared to NZ European students (Crengle, Robinson, Ameratunga, Clark, & Raphael, 2012).

What these findings do tell us, is that for Māori youth with very high levels of substance use, they will require specific strategies that might utilise te reo Māori, cultural pride and connections to their whānau as levers to address their concerns.

Concluding Remarks

Overall, this report highlights that about 11% of New Zealand high school students use substances at levels that are likely to be causing them significant current problems. It shows that these students face serious problems or challenges in multiple areas of their lives. Importantly many of these students use in a context where family and friends use, many do consider cutting down or reducing use and most see health professionals and other adults regularly.

The findings in this report suggest that:

- Efforts must be made to reduce the level of substance use (and related harm) for school students in New Zealand, particularly for those with high levels of use.
- Binge drinking is the most common form of problem substance use among New Zealand secondary school students.
- Approaches to reduce harm from substance use must be grounded in understandings that those with high levels of substance use also report: problems in family and school life; experiences of violence; difficulties in access to healthcare; risky driving; risky sexual behaviour; poor mental health; elevated rates of gambling and being in trouble with the police. Hence clinical and community interventions that focus on single issues are likely to be less efficient or effective in meeting the needs of these students than more holistic or systemic approaches are.
- Efforts to reduce high levels of substance use among young people must consider issues related to social norms (e.g. high rates of use among peers and family), and the availability of alcohol and other substances in communities.
- Efforts to reduce substance use related harm should include approaches to enhance young people's protective factors such as family and school connections, as well as services or supports to help young people deal with substance use and other challenges in their lives.

Useful Links

Table 28. Useful links

General Health and Wellbeing	
Health Information for Young People	www.youthline.co.nz/
Youth2000 – Youth Health Information and Statistics	www.youthresearch.auckland.ac.nz/
Substance Use	
Drug Helpline (for alcohol and drugs)	0800 787 797
Altered High: Youth alcohol and drug service in Auckland	www.alteredhigh.com
The New Zealand Drug Foundation	www.drugfoundation.org.nz
Quitline	www.quit.org.nz
Sexual Health	
OUTLineNZ offers toll-free phone counselling and support for lesbian, gay, bisexual and transgender people	www.outline.org.nz or 0800 OUTLINE
Rainbow YOUTH	www.rainbowyouth.org.nz
Family Planning	www.familyplanning.org.nz
Emotional Wellbeing and Mental Health	
Mental Health Foundation Education Packages for Schools Coping with Depression	www.mentalhealth.org.nz/page/5-Home
The Lowdown – For Young People with Depression	www.thelowdown.co.nz
Suicide Prevention	www.spinz.org.nz
Coping with Grief	www.skylight.org.nz/young-people.aspx
Common Ground	www.commonground.org.nz

References

- Adolescent Health Research Group. (2002). *Alternative education students health: From Northland and Auckland regions*. Auckland, New Zealand: University of Auckland.
- Adolescent Health Research Group. (2003). *New Zealand Youth: A profile of their health and wellbeing*. Auckland, New Zealand: University of Auckland.
- Adolescent Health Research Group. (2008). *Youth'07: The health and wellbeing of secondary school students in New Zealand. Initial findings*. Auckland, New Zealand: The University of Auckland.
- ASH (2012). *Factsheet youth smoking data 2012*. Retrieved from http://www.ash.org.nz/research-and-information/ashresearch/latest-ash-year-10-survey/factsheet_1_youth_smoking_data-2012/
- Bernat, D.H., & Resnick, M.D. (2006). Healthy youth development: Science and strategies. *Journal of Public Health Management Practice*, 12(Suppl. 6), S10-16.
- Breinbauer, C., & Maddaleno, M. (2005). *Youth: Choices and Change: Promoting Healthy Behaviors in Adolescents*. Washington, D.C.: Pan American Health Association.
- Clark, T.C., Robinson, E., Crengle, S., Grant, S., Galbreath, R.A. & Sykora, J. (2009). *Youth'07: The Health and Wellbeing of Secondary School Students in New Zealand. Findings on Young People and Violence*. Auckland: The University of Auckland.
- Clark, T. C., Smith, J. M., Raphael, D., Jackson, C., Fleming, T., Denny, S., . . . Robinson, E. (2010). *Youth'09: The health and wellbeing of young people in alternative education. A report on the needs of alternative education students in Auckland and Northland*. Auckland, New Zealand: The University of Auckland.
- Clark, T. C., Fleming, T., Bullen, P., Denny, S., Crengle, S., Dyson, B., Fortune, S., Lucassen, M., Peiris-John, R., Robinson, E., Rossen, F., Sheridan, J., Teevale, T., Utter, J. (2013). *Youth'12 Overview: The health and wellbeing of New Zealand secondary school students in 2012*. Auckland, New Zealand: The University of Auckland
- Clark, T. C., Fleming, T., Bullen, P., Crengle, S., Denny, S., Dyson, B., . . . & The Adolescent Health Research Group (2013b). *Youth'12 prevalence tables: The health and wellbeing of New Zealand secondary school students in 2012*. Auckland, New Zealand: The University of Auckland.
- Crengle, S., Clark, T. C., Robinson, E., Bullen, P., Dyson, B., Denny, S., . . . Adolescent Health Research Group. (2013). *The health and wellbeing of Maori New Zealand secondary school students in 2012. Te Ara Whakapiki Taitamariki: Youth'12*. University of Auckland Retrieved from www.youthresearch.auckland.ac.nz
- Crengle, S., Robinson, E., Ameratunga, S., Clark, T., & Raphael, D. (2012). Ethnic discrimination prevalence and associations with health outcomes: data from a nationally representative cross-sectional survey of secondary school students in New Zealand. *BMC Public Health*, 12(1), 45.
- Families Commission (2011). *Teenage pregnancy and parenting. An overview*. Retrieved from <http://www.familiescommission.org.nz/publications/research-reports/teenage-pregnancy-and-parenting>
- Johnson, R., & Denny, S. (2007). *The health and wellbeing of secondary school students attending Teen Parent Units in New Zealand*. Auckland, New Zealand: The University of Auckland.
- Lawlor, D. A., & Shaw, M. (2004). Teenage pregnancy rates: High compared with where and when? *Journal of the Royal Society of Medicine*, 97(3), 121–123. doi: 10.1258/jrsm.97.3.121
- McLaren, K. (2002). *Youth development literature review: Building strength*. Retrieved from Ministry of Youth Development website: www.myd.govt.nz/documents/about-myd/publications/building-strength-youth-development-literature-review-2002.pdf
- Merry, S., & Stasiak, K. (2011). Depression in young people. In P. Gluckman & H. Hayne (Eds.), *Improving the transition: Reducing social and psychological morbidity during adolescence. A report from the Prime Minister's Chief Science Advisor* (pp.191–207). Auckland, New Zealand: Office of the Prime Minister's Science Advisory Committee.

- Ministry of Health. (2013). *New Zealand Health Survey: Annual update of key findings 2012/13*. Wellington: Ministry of Health.
- Ministry of Social Development (2010). *The social report 2010*. Retrieved from <http://socialreport.msd.govt.nz/safety/road-casualties.html>
- Mulye, T. P., Park, M. J., Nelson, C. D., Adams, S. H., Irwin Jr, C. E., & Brindis, C. D. (2009). Trends in adolescent and young adult health in the United States. *Journal of Adolescent Health, 45*(1), 8–24. doi: 10.1016/j.jadohealth.2009.03.013
- Patton, G. C., Coffey, C., Sawyer, S. M., Viner, R. M., Haller, D. M., Bose, K., . . . Mathers, C. D. (2009). Global patterns of mortality in young people: A systematic analysis of population health data. *The Lancet, 374*(9693), 881–892. doi: 10.1016/S0140-6736(09)60741-8
- Pickett, W., Molcho, M., Elgar, F. J., Brooks, F., de Looze, M., Rathmann, K., . . . Currie, C. (2013). Trends and socioeconomic correlates of adolescent physical fighting in 30 countries. *Pediatrics, 131*(1), e18–e26. doi:10.1542/peds.2012-1614.
- Resnick, M.D. (2000). Protective factors, resiliency, and healthy youth development. *Adolescent Medicine, 11*(1), 157-164.
- Resnick, M.D., Harris, L.J., & Blum, R.W. (1993). The impact of caring and connectedness on adolescent health and well-being. *Journal of Paediatrics and Child Health, 29* (Suppl. 1), S3-S9. Doi: 10.1111/j.1754.1993.tb02257.x
- UNICEF Office of Research. (2013). *Child well-being in rich countries. A comparative overview* (Innocenti ReportCard 11). Florence, Italy: Author
- Viner, R. M., Ozer, E. M., Denny, S., Marmot, M., Resnick, M., Fatusi, A., & Currie, C. (2012). Adolescence and the social determinants of health. *The Lancet, 379*(9826), 1641–1652. doi: 10.1016/S0140-6736(12)60149-4

Appendices

Appendix 1

Very high substance use among students aged under 16 years

The proportions of students aged under 16 who met each very high substance use criterion are shown below. Binge drinking alcohol was the most common criterion met. There were differences by sex, ethnicity and neighbourhood deprivation.

Table 29. Very high substance use, among students aged under 16 years old

		Weekly drinking (under 16 year olds) Consumed alcohol several times a week or more		Binge drinking alcohol (under 16 year olds) Consume more than 5 drinks within in one session , 2 or more times in the last 4 weeks	
		n / N	% (95% CI)	n / N	% (95% CI)
Total		91 / 5279	1.7 (1.4-2.1)	406 / 5268	7.7 (6.7-8.7)
Sex	Female	46 / 2871	1.6 (1.2-2.1)	236 / 2864	8.2 (7.0-9.5)
	Male	44 / 2407	1.8 (1.3-2.4)	169 / 2403	7.0 (5.5-8.6)
Ethnicity	Māori	35 / 1127	3.0 (2.1-4.0)	174 / 1125	15.4 (13.3-17.6)
	Pacific	13 / 745	1.7 (0.9-2.6)	50 / 742	6.8 (4.9-8.6)
	Asian	3 / 563	0.5 (0.0-1.2)	7 / 562	1.3 (0.2-2.3)
	European	29 / 2496	1.2 (0.7-1.7)	149 / 2492	5.9 (4.8-7.1)
	Other	8 / 339	2.4 (0.8-4.1)	23 / 338	7.1 (3.8-10.3)

Table 29 continued on next page

Neighbourhood deprivation	Low deprivation	21 / 1662	1.3 (0.7-1.9)	98 / 1659	5.9 (4.4-7.3)
	Medium deprivation	29 / 1873	1.5 (0.9-2.2)	139 / 1868	7.5 (6.0-9.0)
	High deprivation	40 / 1693	2.4 (1.6-3.1)	164 / 1691	9.7 (7.9-11.5)

Table 29. Very high substance use, among students aged under 16 years old (continued)

		Weekly marijuana use (under 16 year olds)		Other substance use (under 16 year olds)	
		Use marijuana once or more a week		Used other substances 2 or more times	
		n / N	% (95% CI)	n / N	% (95% CI)
Total		137 / 5223	2.6 (2.0-3.2)	101 / 5239	2.0 (1.5-2.4)
Sex	Female	53 / 2847	1.8 (1.3-2.4)	67 / 2859	2.4 (1.8-3.0)
	Male	83 / 2375	3.5 (2.6-4.4)	33 / 2379	1.5 (0.6-2.3)
Ethnicity	Māori	70 / 1106	6.3 (4.9-7.7)	40 / 1113	3.7 (2.6-4.8)
	Pacific	12 / 728	1.7 (0.7-2.6)	10 / 732	1.4 (0.6-2.2)
	Asian	3 / 560	0.5 (0.0-1.2)	1 / 563	0.2 (0.0-0.5)
	European	42 / 2483	1.7 (1.1-2.2)	39 / 2486	1.6 (1.2-2.1)
	Other	8 / 338	2.5 (0.6-4.4)	10 / 337	3.2 (0.6-5.7)

Table 29 continued on next page

Neighbourhood deprivation	Low deprivation	28 / 1652	1.7 (1.0-2.4)	23 / 1653	1.4 (0.8-2.1)
	Medium deprivation	42 / 1856	2.2 (1.5-3.0)	40 / 1864	2.2 (1.4-3.1)
	High deprivation	64 / 1665	3.9 (2.8-5.0)	38 / 1673	2.3 (1.6-3.0)

Appendix 2

Very high substance use among students aged 16 years and over

The proportions of students aged 16 years or over who met each very high substance use criterion are shown below. Binge drinking alcohol was the most common criterion met, while using other substances, using marijuana and frequently using alcohol were less common.

Table 30. Very high substance use among students 16 years or over

		Problem alcohol frequency (16 or over)		Problem binge drinking alcohol (16 or over)	
		Drink alcohol most days a week or more		Consume more than 5 drinks within in one session, every weeks or more	
		n / N	% (95% CI)	n / N	% (95% CI)
Total		33 / 2886	1.1 (0.8-1.5)	345 / 2886	11.9 (10.0-13.9)
Sex					
	Female	9 / 1616	0.6 (0.2-0.9)	144 / 1615	8.9 (7.2-10.7)
	Male	24 / 1269	1.9 (1.1-2.6)	201 / 1270	15.7 (12.6-18.8)
Ethnicity					
	Māori	7 / 471	1.5 (0.3-2.7)	83 / 471	17.6 (14.0-21.2)
	Pacific	3 / 360	0.8 (0.0-1.9)	26 / 360	7.2 (4.5-9.9)
	Asian	3 / 447	0.7 (0.0-1.4)	17 / 447	3.8 (2.1-5.5)
	European	20 / 1455	1.4 (0.8-1.9)	210 / 1455	14.5 (12.1-16.8)
	Other	0 / 152	-	9 / 152	5.7 (2.3-9.1)

Table 30 continued on next page

Neighbourhood deprivation	Low deprivation	14 / 1011	1.4 (0.7-2.1)	141 / 1011	13.9 (11.2-16.7)
	Medium deprivation	11 / 1044	1.0 (0.5-1.6)	123 / 1044	11.7 (9.6-13.9)
	High deprivation	7 / 791	0.9 (0.1-1.7)	76 / 791	9.6 (6.6-12.6)

Table 30. Very high substance use among students 16 years or over (continued)

		Problem marijuana use (16 or over)		Problem Other substance use (16 or over)	
		Use marijuana every day, or more often		Used other substances 4 or more times	
		n / N	% (95% CI)	n / N	% (95% CI)
Total		43 / 2876	1.5 (1.0-2.0)	65 / 2872	2.4 (1.6-3.0)
Sex					
Sex	Female	12 / 1611	0.7 (0.2-1.2)	26 / 1614	1.6 (0.8-2.4)
	Male	31 / 1264	2.5 (1.6-3.4)	39 / 1257	3.1 (2.0-4.2)
Ethnicity					
Ethnicity	Māori	21 / 465	4.5 (2.1-6.9)	13 / 465	2.9 (1.0-4.8)
	Pacific	2 / 358	0.6 (0.0-1.2)	4 / 355	1.1 (0.0-2.4)
	Asian	2 / 448	0.4 (0.0-1.1)	6 / 448	1.3 (0.4-2.3)
	European	16 / 1452	1.1 (0.6-1.6)	36 / 1452	2.5 (1.6-3.5)
	Other	2 / 152	1.3 (0.0-3.2)	6 / 151	3.7 (0.8-6.7)

Table 30 continued on next page

Neighbourhood deprivation	Low deprivation	13 / 1007	1.3 (0.6-2.0)	23 / 1007	2.3 (1.1-3.5)
	Medium deprivation	14 / 1045	1.4 (0.6-2.1)	29 / 1041	2.8 (1.6-4.1)
	High deprivation	16 / 784	2.0 (0.7-3.3)	13 / 784	1.7 (0.7-2.7)