Patterns of Risky Alcohol Use in British Columbia– Results of the 2004 Canadian Addiction Survey

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Overview

- Drinking patterns in BC and Canada were compared against guidelines for low risk alcohol consumption using the 2004 Canadian Addiction Survey (CAS)
- The low response rate (44% in BC, 47% in Canada) and other differences prevented valid comparisons with the last national survey in 1994
- The CAS greatly underestimated alcohol consumption, and reported consumption accounted for only 32% to 35% of known alcohol sales in Canada and 30% to 38% of sales in BC (depending on types of survey questions used)
- It is likely that the estimates of illicit substance use reported in the CAS would similarly, or even more significantly, under–estimate actual consumption
- 73% of all reported alcohol consumption was in excess of Canadian low–risk drinking guidelines and 53% was above less conservative international guidelines
- Over 90% of the alcohol consumption reported by males aged 15 to 24 years was consumed in excess of Canadian guidelines and over 85% of that consumed by young females exceeded the guidelines
- Just under 30% of males and 14% of females reported regularly drinking at risk levels for short–term and/or long–term harm
- 40% of British Columbians at least occasionally drink above low risk levels and put themselves and others at risk of short–term harm
- There were very similar levels of at risk drinking across urban, rural and intermediate regions of BC
- It is recommended that improved survey methods are employed in the future to assess risky consumption patterns with an emphasis on achieving higher response rates and fuller coverage of known alcohol sales
- Detailed statistical tables are available in the Appendix at http://carbc.ca/Portals/0/PropertyAgent/2111/Files/14/AlcoholBulletin2005App.pdf

Figure 1: Percentage of alcohol drunk at risk levels for short–term harm in BC and Canada

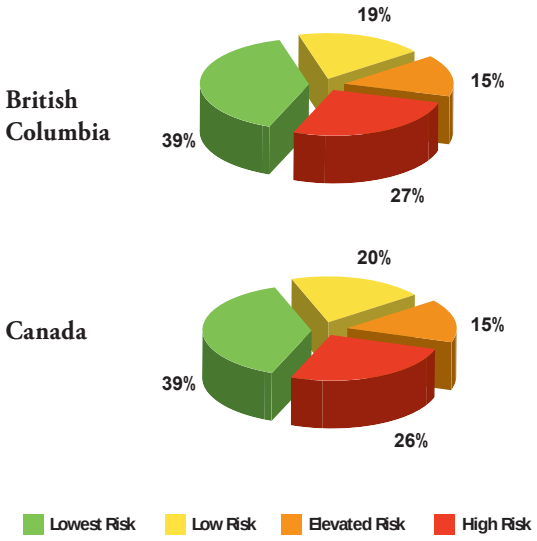
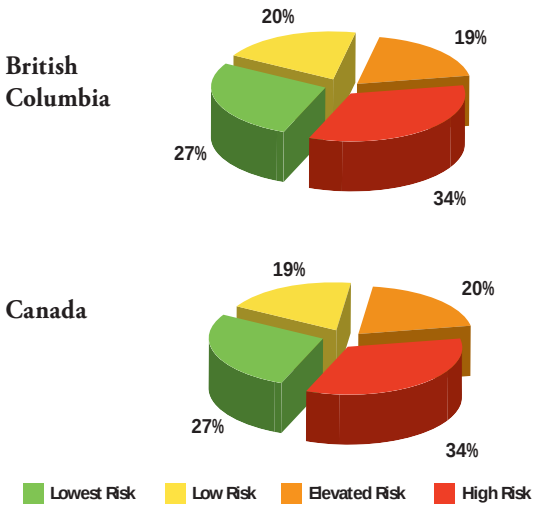


Figure 2: Percentage of alcohol drunk at risk levels for short–term and/or long–term harm in BC and Canada



Introduction

In this first CARBC Statistical Bulletin, data from the 2004 Canadian Addiction Survey (CAS) are used to address the question: to what extent does alcohol use in BC and Canada as a whole comply with guidelines for low risk drinking? By international standards, the low risk drinking guidelines for Canadians developed by the Centre for Addiction and Mental Health (CAMH) in Ontario (Bondy et al, 1999) are conservative (International Center on Alcohol Policy, 2003), recommending no more than two standard drinks on any one day for men and women, no more than 9 per week in total for women and 14 for men. Low risk guidelines endorsed by Australia and New Zealand (NHMRC, 2001), used in the World Health Organization's *International Guide to Monitoring Alcohol Consumption and Related Harms* (WHO, 2000) and as a partial basis for calculations in the WHO Global Burden of Disease study (Rehm and Room, 2005) are also used here as a reference point. These different guidelines were developed from the same data sources and reflect different degrees of caution: the Canadian guidelines are arguably set at a level that maximises benefits while minimising harms whereas

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the Australian guidelines are set at a level over which consumption is likely to result in *net* harm (Stockwell, 2001). In terms of Canadian standard drinks (usually taken as 13.6g or a bottle of beer, medium glass of wine or shot of spirits) the international guidelines define drinking that poses risk to health a) *in the long term* as 11 or more drinks per week for women and 22 per week or more for men, and b) *in the short term* as 5 or more drinks in one day for men and 4 or more for women. Higher levels still are defined which are considered to be 'high risk' for short and long–term health and safety. The majority of alcohol–caused deaths and, in particular, years of life lost in Canada are associated with the short–term effects of alcohol use (Single et al, 1999).

The recent national overview of results produced by the Canadian Centre on Substance Abuse of the 2004 CAS, reports that 22% of British Columbians who drank in the past year did so above Canadian guidelines, only slightly below the national average (Adlaf et al, 2005). The present Bulletin extends these analyses (i) by critically examining the extent of under–reporting in the CAS (ii) by comparing BC and Canadian consumption patterns against other internationally recognised guidelines (iii) by estimating what proportion of all alcohol consumption in Canada is in excess of various sets of low risk guidelines, and (iv) by comparing results using different questions on drinking available in the CAS.

Other findings from the 2004 CAS main report indicated that BC respondents were more likely to report experiencing problems from other people's drinking but were less likely to experience problems from their own drinking or dependence compared with other Canadians. However, as many as 17% of current drinkers reported significant problems from their drinking indicative of at least mild alcohol dependence and 30% consider that alcohol use has at some time in the past harmed one or more area of their lives. Respondents from BC were concerned about alcohol use to the same extent as other Canadians and especially physical health. Like other Canadians, BC respondents are not generally supportive of tax increases or raising the drinking age but strongly supported the enforcement of laws regarding not serving intoxicated customers and only one third want the government ownership of liquor stores to end. Comparisons with a previous national survey conducted in 1994 were also reported but the response rates and the time of year at which the surveys were conducted were quite different and so direct comparisons are not valid.

The 2004 CAS is the first in–depth national survey of alcohol and other drug use to be conducted in Canada for 10 years. Numerous Canadian (Single et al, 1999) and international studies (Rehm and Room, 2005) have estimated that the deaths caused by risky and high risk alcohol use greatly exceed those caused by all illicit drugs combined. New estimates will be available soon but the last for BC was that over 1700 deaths were wholly or partly caused by excess alcohol consumption in 2003 (BC Vital Statistics, 2003) and 185 deaths were directly due to illicit drugs (Buxton, 2005). It becomes important, therefore, to track the extent of consumption patterns that contribute to these premature deaths from alcohol. The extent to which alcohol consumption is posing health and safety risks to Canadians is also relevant for how energetically its sale and promotion should be regulated by liquor licensing and policing strategies. Future CARBC Bulletins will examine patterns of use from illicit drugs.

We expected that the 2004 CAS would underestimate levels of alcohol consumption in Canada. Firstly, following a trend found with other telephone surveys, the response rate was extremely low at 47% for Canada and 44% for BC. This increases the probability that heavier drinkers are not well represented in the final sample. Secondly, the methods used to ask about alcohol consumption have been shown previously to result in significant under–reporting: the Quantity–Frequency method assessing typical amounts per day and drinking frequency result in particularly large underestimates (Rehm et al, 1999; Stockwell et al, 2004). The other method used of asking about drinking in each of the last 7 days usually results in higher levels of recall but suffers from missing occasional drinkers who, for various reasons, had abstained in the previous week (WHO, 2000). As a consequence, the following results are highly conservative estimates of risky alcohol use in BC and Canada but are presented as currently the best available.

Methods

The CAS sample comprised 13,909 Canadians aged 15 and older who were interviewed by telephone between December 16, 2003 and April 19, 2004. Random digit–dialling was used to locate households within a) the Vancouver Census Metropolitan Area and b) the rest of BC. Within selected households, one respondent aged 15 years or older who could complete the questionnaire in either English or French was selected based on the most recent birthday in the household. A minimum of 1,000 people were interviewed in each participating province. In BC, the Ministry of Health and CARBC together paid for an extra 2000 interviews. A minimum of 12 call–backs were placed to unanswered numbers and all households who refused to participate on the first contact were re-contacted in order to secure maximum participation. The data reported here are all 'weighted' in order to make the results as representative of the populations of BC and Canada. The weights were based on 21 regional strata divided into 6 age groups and also by gender and also took account of 'sample design effects' i.e. the fact that different sample sizes were used in each province relative to the provincial populations. Detailed description of the CAS methods can be found in the main national report (Adlaf et al, 2005).

A "drinker" is defined here as anyone who has had at least one drink of alcohol in the past 12 months, a "former drinker" has consumed alcohol in their life but not in the last 12 months and a "lifetime abstainer" someone who has never drunk alcohol in their life. A "drink" refers to a standard drink based on the Canadian Low–Risk Alcohol guidelines which is one Standard Drink or about 13.6 g of alcohol which is the approximate alcohol content of a 12oz 5% beer, a 5oz glass of 12% wine or 1.5oz of 40% spirits.

For the purposes of this report, different levels of risky alcohol consumption are defined as follows:

- *Lowest risk*: minimal risk of harm at a level that may also optimise health benefits, equivalent to the CAMH Canadian guidelines.
- *Low risk*: still a minimal level of risk of harm and also the likelihood of health benefits for people aged over 45 years, as defined by the Australian and WHO guides.
- *Elevated Risk:* levels at which risk of harm is significantly increased beyond any potential benefits, as defined by the Australian and WHO guides
- *High risk*: levels at which there is substantial risk of serious harm, and above which risk continues to increase rapidly, as defined by the Australian and WHO guides.

Chronic health problems are those resulting from long–term daily excessive patterns of drinking, as defined by the average amount of alcohol consumed per week in the past year. The Canadian low–risk drinking guidelines define this as up to 14 drinks per week for men and up to 9 drinks per week for women. These will be defined here as *Lowest Risk* guidelines to distinguish them from *Low Risk* drinking as defined in international guidelines.

Short–term risk is the risk of harm, particularly injury or death that is associated with given levels of acute drinking within a single drinking session. Evidence shows that much of the harm associated with alcohol consumption is associated with the effects of acute alcohol consumption (Single et al, 1999). Acute risk markedly increases with consumption of 5 or more drinks on one occasion for men and 4 or more drinks on one occasion for women.

The World Health Organization guide on monitoring (WHO, 2000) has defined the levels for acute risk for men and women based on the number of grams of alcohol consumed. These amounts have been translated to the number of Canadian standard drinks as shown on the following table.

No questions in the 2004 CAS directly ask about frequency of drinking over the past 12 months in relation to Canadian guidelines for low–risk drinking. However, there are questions asking women how often they drank 4 or more drinks in one day and asking men how often they had 5 or more drinks. These questions correspond (by chance) to the international guide levels for low risk drinking.

In addition to estimating how many people drank in excess of the different guidelines we also estimate how much alcohol was drunk in a way that was inconsistent with either type of guideline (acute and chronic). We present estimates of the proportion of all drinks reported to have been consumed on risky drinking days according to the above guideline levels, first in relation to acute harm and then in relation to either acute or chronic harm. These estimates were based on detailed questions about numbers of drinks consumed on each of the last 7 days. Weighted data were used and the resulting estimates characterise the drinking patterns of an entire population rather than counting how many individuals exceed certain daily levels of consumption. These estimates are good benchmarks to be used for assessing the extent of risky alcohol consumption for monitoring purposes and address the issue of the extent to which the sale of alcohol is being effectively regulated in the interests of public health and safety (WHO, 2000).

Table 1: Definitions of risk levels for long–term health effects of alcohol consumption

Risk Level	Reference guidelines	Max. # of Standard Drinks per week*	
		Males	Females
Lowest Risk	Canadian, CAMH	1–14	1–9
Low Risk	Australian & WHO	15–21	10
Elevated Risk	Australian & WHO	22–30	11–21
High Risk	Australian & WHO	31 +	22 +

*(1 standard drink = 13.6g)

Table 2: Definitions of risk levels for short–term health and safety effects of alcohol consumption

Risk level	Reference guidelines	Max. # of Standard Drinks* on any one day	
		Males	Females
Lowest Risk	Canadian, CAMH	1–2	1–2
Low Risk	Australian & WHO	3–4	3
Elevated Risk	Australian & WHO	5–7	4
High Risk	Australian & WHO	8 +	5 +

*(1 standard drink = 13.6g)

Findings

This bulletin may be downloaded at http://carbc.ca/portals/0/PropertyAgent/2111/Files/14/AlcoholBulletin2005.pdf. More detailed tables are available in the Appendix at http://carbc.ca/Portals/0/PropertyAgent/2111/Files/14/AlcoholBulletin2005App.pdf.

Validity of self–reported consumption levels

Per capita consumption of alcohol for persons aged 15 and over was estimated from the survey using a) the quantity–frequency questions regarding typical consumption patterns over the past 12 months and b) numbers of standard drinks consumed during the previous 7 days. Table 3 illustrates that just over one third of known alcohol sales was accounted for by the self–reported consumption of respondents when typical consumption (quantity and frequency) over the past 12 months was used as the yardstick and still lower coverage of known sales was achieved using the last 7 day questions in the 2004 CAS. Level of underestimation was similar in BC and Canada as a whole. In fact, actual under–reporting of consumption is greater than estimated here as known sales data do not fully account for home–produced, smuggled and duty free imports. Macdonald et al (1999) estimated that the level of under–reporting in sales data is between 9% and 28% (Macdonald et al, 1999).

Proportion of alcohol consumed in BC and Canada above low risk levels for short–term harm

Figure 1 summarises the results of analyses of how much alcohol was reported to have been drunk on days when they exceeded the various risk levels defined above in Table 2 for low risk alcohol consumption for minimising short–term health and safety problems. Self–reported consumption in the last 7 days was used for these estimates. Just over 61% of alcohol was consumed on days when the 'lowest risk' Canadian guidelines were exceeded and as much as 42% was at elevated or high risk levels as defined by less conservative international guidelines. As shown in Table 3 these estimates are based on self–reported consumption that substantially underestimates actual alcohol consumption.

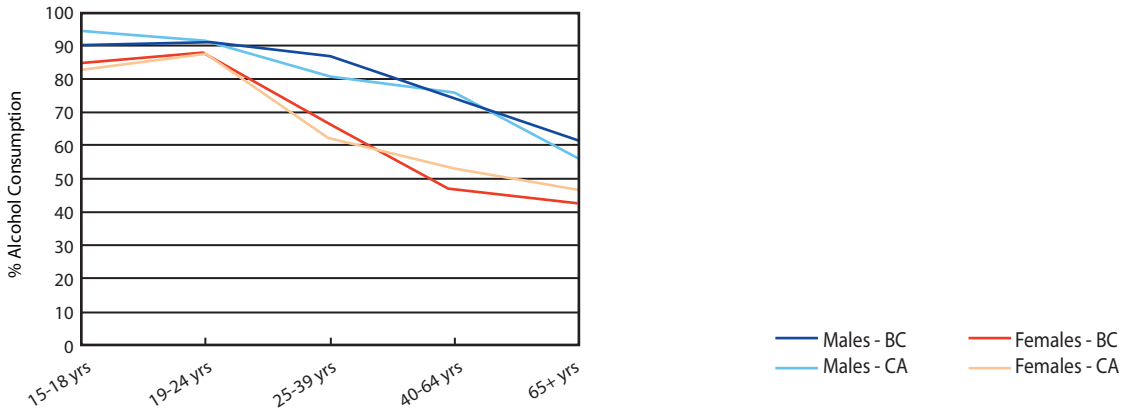
Proportion of alcohol consumed above low risk levels for short–term and/or long–term harm

Figure 2 provides an overview of the proportion of alcohol consumed in a way that is risky in terms of short–term and/or long–term harms as defined by Canadian and international guidelines. The 2004 CAS questions regarding consumption over the 7 days before interview were used here. These data are graphed by age and gender in Figure 3 in relation to the extent of compliance with Canadian low–risk drinking guidelines (see also Table A1 on website). The table shows that at one extreme over 90% of alcohol consumed by males aged 15 to 24 is in excess of Canadian guidelines for low–risk drinking. The lowest proportion applies to women aged 65 years or older which is 44% in BC and 48% in Canada as a whole. The Canadian guidelines are among the most conservative from an international perspective but that should be balanced by the fact that these self–reported levels of alcohol consumption amount to less than one third of known alcohol sales 2004.

Table 3: Estimates of per capita alcohol consumption from sales data and from different CAS questions in litres of ethanol per person aged 15+ per year

Reference population	Statistics Canada estimates for 2003/2004 financial year	2004 CAS using Quantity–Frequency in last 12 months		2004 CAS using # standard drinks drunk in last 7 days	
		Estimate	% coverage of sales	Estimate	% coverage of sales
BC	8.0 litres	3.01 litres	37.6%	2.39 litres	29.9%
Canada	7.9 litres	2.96 litres	37.5%	2.52 litres	31.9%

Figure 3: Percentage of alcohol consumed at risk levels for acute and/or chronic harm, as specified in the Canadian alcohol guidelines, by age and gender in BC and the whole of Canada (CA)



Proportion of people who drink alcohol by age and gender

Most respondents were current drinkers with 82% of males and 77% of females both in BC and Canada reporting having had at least one drink of alcohol in the past year (see Table A2 on website for these totals). As shown in Figure 4, this level is lowest among those in the sample who are below the legal drinking age (still 68% of males and 64% of females), is then highest among young adults (95% of males and 85% of females in BC) but falls away with age down to 76% of males and 70% of females aged 65 or older. The reduction in number of current drinkers with age is more dramatic for Canadians as a whole, reducing to 72% of males and 65% of females in this older age group. The reduction in number of current drinkers with age is mostly due to an increasing number of people in this age group becoming 'former drinkers', overall 21% of all Canadians aged 65 and older.

Proportion of people who drink alcohol at risk levels for short–term harm

The 2004 Canadian Addiction Survey included no questions that permitted an assessment of the frequency with which respondents could report that they drank above Canadian guidelines for minimising short–term problems from drinking. The closest question concerned frequency of drinking 4 drinks or more for women in one day (5 or more for men) which corresponds closely to the limit for acute harm in the international guidelines. Results from analysis of this question are detailed in Tables 4 below and A3 on the website. Just over 40% of respondents in BC and Canada reported drinking at this level at least once a year, about one fifth at least once a month and only 5% weekly or more often. Males were more likely than females to have exceeded their daily threshold for acute risk with around 50% having done so at least once in the last year compared with a third of women.

Figure 4: Drinkers, former drinkers and abstainers in BC and Canada by age for men and women

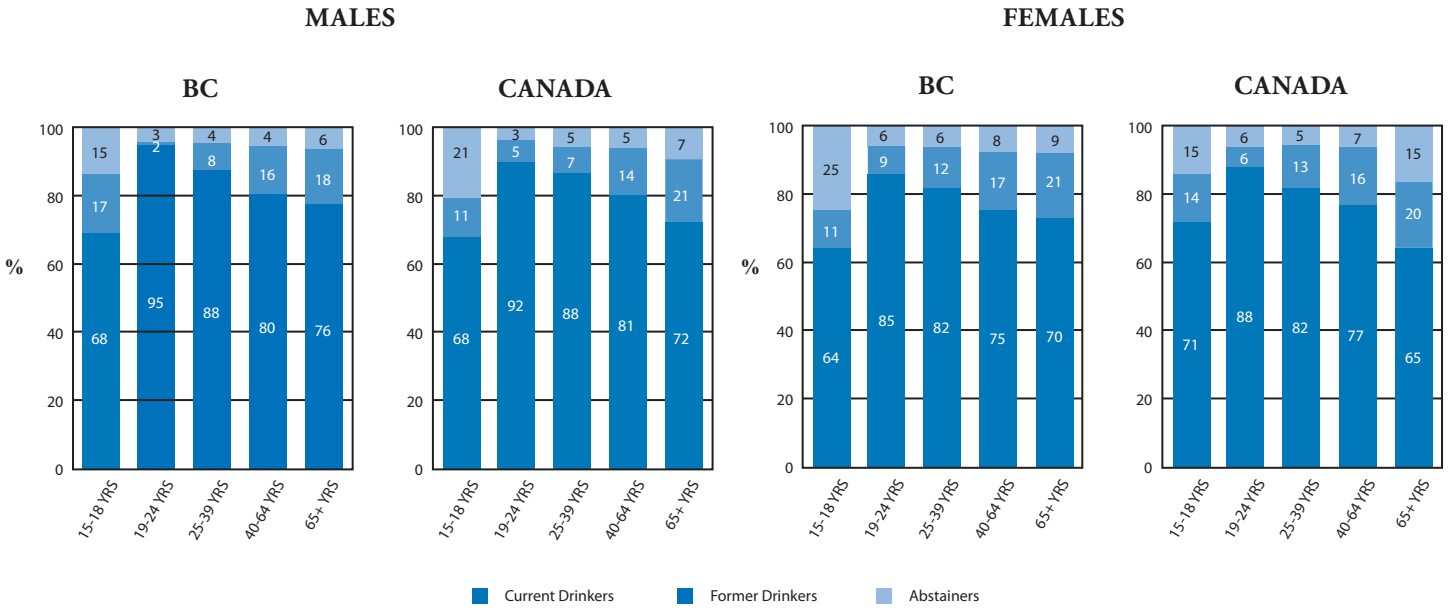


Table 4: Percentages of BC and Canadian residents reporting that they consume 4 or more drinks (females) or 5 or more drinks (males) at different frequencies in the past 12 months

Risk level	Frequency of drinking					
	More than once a week	Once a week	2–3 times a month	Once a month	Less than once a month	Never
British Columbians						
Males	3.2	3.6	8.2	11.0	22.6	51.4
Females	1.0	1.8	3.3	7.1	20.2	66.6
Total	2.1	2.5	5.7	9.0	21.4	59.3
Canadians						
Males	2.9	4.6	8.9	11.3	21.7	50.5
Females	1.1	1.4	3.3	7.2	20.4	66.6
Total	2.0	3.0	6.0	9.2	21.0	58.8

Figure 5 shows how a pattern of risky alcohol use for short–term harm is most frequent among younger drinkers both in BC and Canada and then declines sharply with age both for males and females. Just under half of males aged 19 to 24 years in BC and Canada as a whole drink at a hazardous level at least once a month, whereas less than 5% of women aged 65 years and over do so.

Proportion of people who drink alcohol at risk levels for long–term harm

Relatively small numbers of respondents reported consuming alcohol at levels above lowest risk (as assessed against Canadian low–risk guidelines) for long–term harm (see Table A4 on website)—around 9% of males and 5% of females. This longer term pattern of risky drinking is highest among young people of drinking age at 12%. With increasing age a trend towards less risky alcohol use can be observed. Against international guidelines just under 4% of Canadians reported drinking regularly above low risk levels for long–term harm. But, once more, these estimates are based on self–reported data known to greatly under–represent true consumption. Figure 6 breaks these estimates down by age and gender for BC and Canada as a whole.

Figure 5: Percentage of BC and Canadian residents drinking at levels for acute risk (≥5 drinks in a day for men; ≥4 in a day for women) at least once a month in the last year by age and gender.

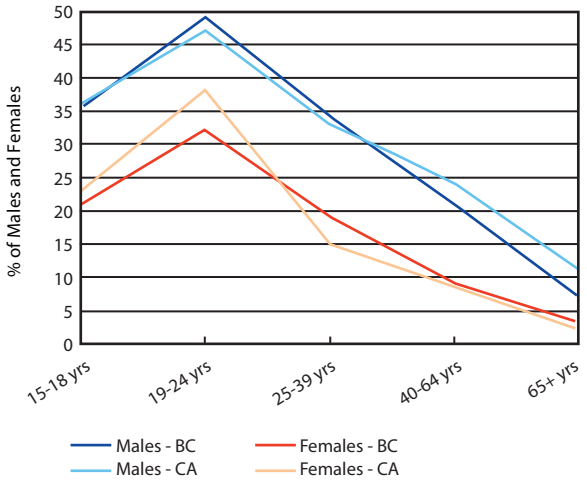
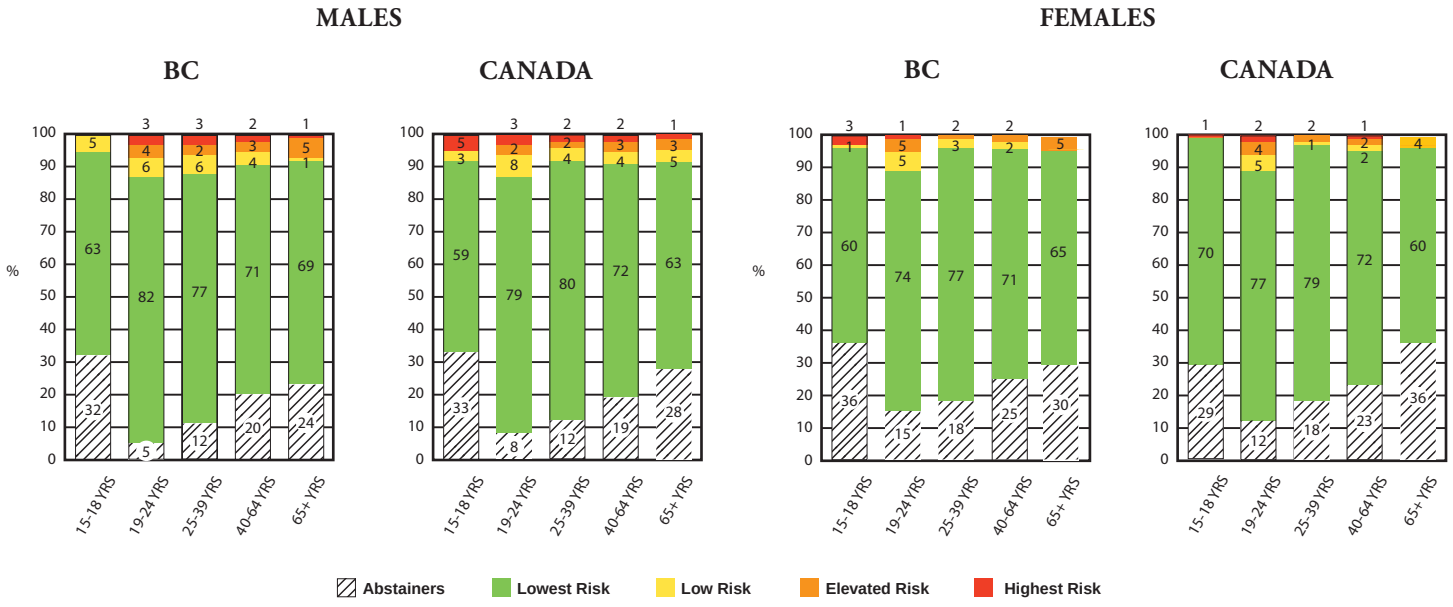


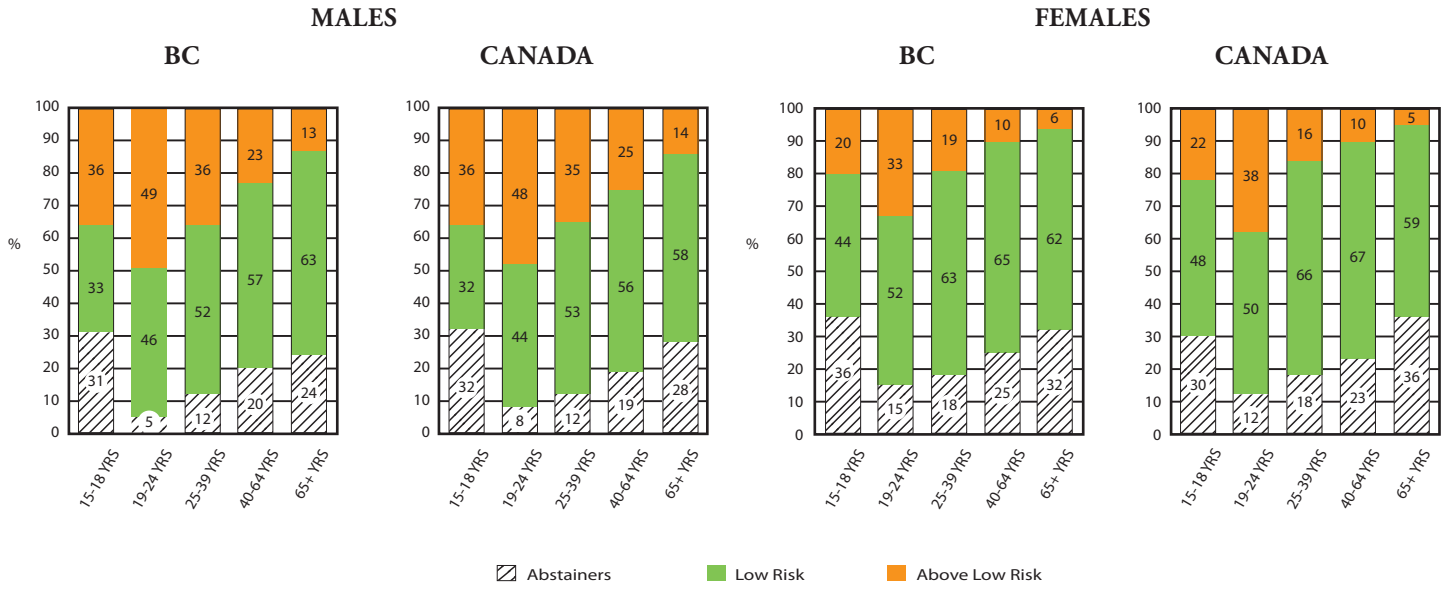
Figure 6: Percentages of BC and Canadian residents drinking in excess of Canadian and international guidelines for reducing risk of long–term health problems in past year by age for men and women



Proportion of people who drink alcohol at risk levels for long–term and/or short–term harm

More than 27% of male respondents and 14% of females reported patterns of drinking that regularly put them at risk of long–term harm as defined by the Canadian guidelines and short–term harm as defined by drinking 4 or more drinks on one day for women at least once per month—or 5 or more for men (see Table A5 on website). For this analysis the current drinkers who drink at low risk for long–term and short–term harm are identified as "low risk drinkers" compared to those who drink above one or both "low risk" guidelines. Again the young adults contain highest proportion of individuals regularly drinking in excess of the guidelines as shown in Figure 7. Around 50% of males and a third of females aged 19 to 24 years reported regularly drinking above low risk drinking guidelines. By contrast 13% of males and only 6% of females aged 65 years or older reported regularly exceeding the low risk guidelines. A comparison of different regions of British Columbia categorised into urban, rural and intermediate identified similar levels of at risk consumption (see Table A7 on website).

Figure 7: Percentage of BC and Canadian residents who abstain, those who drink at a low risk level based on both guidelines and those who drink above the low risk guidelines in the past year by age for men and women



Conclusions

Population surveys to estimate levels of substance use are an inexact science and subject to many biases. Telephone survey 'fatigue' is a widespread problem besetting such surveys. The substantial reduction in response rates to below 50% from just below 80% in 1994 is an indication of this general problem with modern telephone surveys. The low response rate is likely to have been a contributory factor to the disappointing coverage of known alcohol sales in the year of the survey with just under 30% coverage for reports of drinking in the last 7 days for BC respondents and slightly fuller coverage for the last 12 month questions. A combination of poor recall, the use of questions posed only in terms of 'standard drinks' and under–sampling heavy drinkers will each have contributed to this outcome (Stockwell et al, 2004). Furthermore, there is no reason to suppose self–reported consumption of illicit substances will be any more reliable given the greater likelihood of under–sampling drug users and of deliberate under–reporting. It is recommended, therefore, that future surveys of substance use make a priority of achieving higher response rates, attempt to make allowances for under–sampling and use questions which produce fuller reporting of patterns of risky alcohol consumption. In particular the use of graduated frequency methods more sensitive to a pattern of occasional 'binge' drinking would be useful (WHO, 2000) and also new methods which ask about recent use of different types of alcoholic beverage taking account of different container and serve sizes are recommended (see Stockwell et al, 2004; Kerr, 2005).

The percentages of people reporting that they drink in excess of Canadian and especially of international drinking guidelines are clearly substantial underestimates of true levels. Contrasts observed between men and women, older and younger people and between people residing in different regions are still useful and are consistent with other survey data.

Despite the conservative nature of the estimates reported here, it is apparent that a high proportion (at least 70%) of alcohol consumed in Canada is done so in a way which places the drinker's health and safety at some risk as defined both against conservative Canadian guidelines and also less strict international guidelines. Over 5,000 Canadians die from excess alcohol use each year (Rehm et al, in press) and the national survey data reported here indicate the need for the implementation of effective public policies to reduce hazardous alcohol consumption in Canada using best available international evidence for 'what works' (e.g. Babor et al, 2003; Loxley et al, 2004).

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The views expressed in this report are those of the authors and do not necessarily reflect the policies and positions of the funding partners.

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Appendix

Table A1: Percentage of alcohol consumed at risk levels for acute and/or chronic harm as specified by the Canadian alcohol guidelines, in BC and Canada by age and gender

Age (yrs.)	(%) Males		(%) Females		(%) Total	
	BC	CA	BC	CA	BC	CA
15–18	90.9	94.7	84.9	83.3	89.8	90.9
19–24	91.2	91.0	88.6	88.2	90.3	89.9
25–39	86.9	81.2	66.3	62.2	81.6	75.5
40–64	73.0	75.9	48.8	53.2	65.4	69.9
65+	60.7	56.4	43.9	47.6	54.9	53.4
All Ages	79.1	78.0	60.3	62.8	73.4	73.4

Table A2: Percentages of drinkers, former drinkers and abstainers, by age and gender in BC and Canada

	15–18		19–24		25–39		40–64		65+		Total	
	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA
Male												
Current drinker	68.2	67.5	95.0	92.0	88.4	87.7	80.1	80.8	75.7	72.1	82.0	81.8
Former drinker	16.8	11.5	†1.7	5.1	8.1	7.6	15.6	14.4	18.6	20.8	12.9	12.3
Lifetime abstainer	15.0	21.0	†3.3	2.9	3.5	4.7	4.3	4.7	5.7	7.2	5.1	5.9
Female												
Current drinker	63.9	71.4	85.1	88.0	81.9	82.1	75.5	76.9	70.4	64.4	76.7	76.8
Former drinker	†11.3	13.6	8.8	6.0	12.2	13.3	16.9	16.1	20.5	20.4	15.2	15.0
Lifetime abstainer	24.8	15.0	6.1	6.0	5.9	4.7	7.6	6.9	9.1	15.2	8.1	8.2
Total												
Current drinker	66.5	69.4	89.6	90.1	85.1	84.9	77.8	78.9	72.8	67.7	79.3	79.3
Former drinker	14.6	12.5	5.6	5.5	10.2	10.4	16.2	15.3	19.6	20.6	14.1	13.7
Lifetime abstainer	18.8	18.1	4.9	4.4	4.8	4.7	6.0	5.8	7.6	11.7	6.6	7.1

Note: †Unstable estimates due to low cell sizes and assessed against the value of coefficient of variation (CV) of 33.3 (Adlaf and Ialomiteanu 2004 [1]).

Table A3: Percentages of BC and Canadian residents drinking at levels for acute risk (≥5 drinks in a day for males; ≥4 drinks in a day for females) *at least once a month* in the last year, by age and gender

	15–18		19–24		25–39		40–64		65+		Total	
	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA
Males	35.9	36.0	48.6	47.3	34.0	33.3	21.4	24.1	7.4	11.0	26.0	27.8
Females	21.2	22.5	32.2	38.3	18.8	15.1	8.7	9.3	3.6	2.9	13.2	13.0
Total	30.0	29.3	39.6	43.0	26.7	24.1	15.0	16.7	5.3	6.3	19.4	20.2

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Table A4: Percentages of BC and Canadian residents drinking in excess of Canadian and international guidelines for reducing risk of long–term health problems in the last year

	15–18		19–24		25–39		40–64		65+		Total	
	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA
Male												
Abstainers	31.8	32.5	5.0	8.0	11.6	12.3	19.9	19.2	24.3	27.9	18.0	18.2
Lowest risk	62.6	58.7	81.6	79.5	77.4	79.5	71.4	71.8	68.6	63.1	72.8	72.6
Low risk	†4.7	†2.9	†5.9	7.7	5.8	4.2	3.8	3.8	†1.3	†4.8	4.2	4.4
Elevated risk	†0.9	†0.7	†4.2	1.7	2.5	2.1	2.6	2.9	†5.2	†2.9	3.0	2.4
High risk	†0.0	†5.2	†3.3	†3.1	†2.6	1.9	2.2	2.4	†0.6	†1.2	2.0	2.4
Female												
Abstainers	36.1	28.6	14.9	12.0	18.1	18.0	24.5	23.1	29.6	35.7	23.3	23.2
Lowest risk	60.2	70.1	73.6	77.0	77.4	78.5	70.8	72.4	65.1	59.7	71.3	72.0
Low risk	1.2	†0.5	†5.5	5.3	2.7	0.9	1.9	2.0	†0.0	†0.3	2.1	1.7
Elevated risk	†0.0	†0.5	†4.7	4.0	1.5	2.1	2.4	1.9	4.8	4.2	2.7	2.5
High risk	†2.5	†0.3	†1.2	†1.7	†0.2	†0.5	†0.4	†0.6	†0.5	†0.1	†0.5	0.6
Total												
Abstainers	33.5	30.6	10.4	9.9	14.9	15.2	22.2	21.1	27.2	32.4	20.7	20.8
Lowest risk	61.7	64.4	77.2	78.3	77.4	79.0	71.1	72.1	66.7	61.2	72.0	72.3
Low risk	†3.3	1.7	5.7	6.6	4.2	2.6	2.9	2.9	†0.6	†2.3	3.1	3.0
Elevated risk	†0.6	0.6	4.5	2.8	2.0	2.1	2.5	2.4	5.0	3.6	2.9	2.5
High risk	†1.0	2.7	†2.1	2.4	†1.4	1.2	1.3	1.5	†0.5	†0.6	1.3	1.4

Note: †Unstable estimates due to low cell sizes and assessed against the value of coefficient of variation (CV) of 33.3 (Adlaf and Ialomiteanu 2004 [1]).

Table A5: Percentages of people who abstain, those who drink at a low–risk level based on both guidelines, and those who drink above the low–risk guidelines for short–term and/or long–term problems

	15–18		19–24		25–39		40–64		65+		Total	
	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA
Male												
Abstainer	31.3	32.4	4.9	8.3	11.8	12.2	20.2	19.3	24.1	28.0	18.2	18.3
Low Risk Drinker	32.8	31.5	46.5	43.9	52.2	53.0	57.2	55.6	63.4	58.4	54.1	52.7
Above Low Risk	35.9	36.1	48.6	47.8	36.0	34.8	22.6	25.1	12.5	13.6	27.7	29.0
Female												
Abstainer	35.7	30.0	15.0	12.0	17.9	17.8	24.8	23.3	31.9	35.9	24.0	23.7
Low Risk Drinker	44.0	48.0	52.0	50.3	62.9	66.2	65.0	66.7	62.1	59.0	61.6	62.4
Above Low Risk	20.3	22.0	33.0	37.7	19.2	16.0	10.2	10.0	6.0	5.1	14.4	13.9
Total												
Abstainer	33.0	30.7	10.5	10.1	14.8	15.0	22.5	21.3	28.5	32.6	21.2	21.1
Low Risk Drinker	37.2	40.0	49.5	47.0	57.7	59.7	61.2	61.2	62.7	58.8	57.9	57.7
Above Low Risk	29.8	29.3	40.0	42.9	27.5	25.3	16.3	17.5	8.8	8.6	20.9	21.2

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Table A6: Percentages of people drinking in excess of Canadian and international guidelines for reducing risk of long–term health problems in the past WEEK

	15–18		19–24		25–39		40–64		65+		Total	
	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA	BC	CA
Male												
Abstainers	74.6	71.9	39.4	39.9	42.3	47.7	48.7	45.9	53.8	53.6	49.1	48.5
Lowest risk	20.0	22.5	47.9	47.9	47.7	45.8	45.2	48.5	39.4	39.8	43.1	44.8
Low risk	†0.8	†0.5	8.5	8.2	3.7	3.7	3.3	3.0	5.8	4.5	4.1	3.8
Elevated risk	†4.6	4.6	†1.4	1.8	4.4	2.1	1.8	0.9	†0	2.0	2.4	1.7
High risk	†0	†0.5	†2.8	2.3	†1.9	0.8	†0.9	1.7	†1.1	†0.2	1.3	1.2
Female												
Abstainers	80.7	71.4	57.2	50.5	57.2	59.1	59.8	61.2	65.7	72.3	61.1	62.4
Lowest risk	18.1	24.3	32.6	37.6	39.9	37.8	37.0	36.2	30.9	24.3	35.2	33.7
Low risk	†0	†1.0	†1.7	1.4	†0.7	0.5	†0.7	0.3	†0.3	†0.3	0.7	0.5
Elevated risk	†0	1.8	6.3	8.9	†2.0	2.1	2.2	2.0	2.0	3.0	2.6	2.9
High risk	†1.2	1.5	†1.7	1.7	†0.2	0.5	†0.3	0.4	†0.3	†0	†0.5	0.5
Total												
Abstainers	76.9	71.6	49.5	45.0	49.8	53.5	54.3	53.6	60.4	64.5	55.2	55.7
Lowest risk	19.2	23.3	39.4	42.8	43.7	41.7	41.0	42.2	34.6	30.7	39.0	39.0
Low risk	†0.5	0.7	4.7	4.8	2.2	2.1	2.0	1.6	2.6	2.0	2.3	2.0
Elevated risk	†2.8	3.2	4.1	5.2	3.2	2.1	2.0	1.5	1.5	2.6	2.4	2.3
High risk	†0.5	1.0	†2.2	2.0	†1.0	0.6	†0.5	1.0	†0.6	†0.1	0.8	0.8

Note: † n < 10

Table A7: Percentages of people who abstain, those who drink at strictly defined low risk levels (Canadian guidelines), and those who drink at risk for short–and/or long–term harm, by degree of 'urbanity' of area of residence

Geographic Unit	Abstainers	Low Risk Drinkers	At Risk Drinkers
Metropolitan Areas (> 100,000 residents) [2]	21.2	62.2	16.6
Intermediate rural/urban areas (> 10,000 residents) [2]	19.2	66.2	14.5
Mostly rural areas (< 10,000 residents)	21.2	63.0	15.4

(n=2351, unweighted data, 21.6% of responses with invalid geographic reference)

References

[1] Adlaf, E. and Ialomiteanu, A. (2004). Canadian Addiction Survey 2004: Microdata eGuide. It can be accessed electronically at www.ccsa.ca. Ottawa, Canadian Centre on Substance Abuse.
[2] Statistics Canada (2203). Geographic Attributes: Geographic Code. http://www12.statcan.ca/english/census01/Products/Reference/dict/geo027.htm