

At-a-glance

Measuring self-reported change in alcohol and cannabis consumption during the second wave of the COVID-19 pandemic in Canada

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Abstract

This study presents nationally representative estimates of self-reported changes in alcohol and cannabis consumption since the onset of COVID-19 in Canada. We used data from the Survey on COVID-19 and Mental Health (collected from September to December 2020) to calculate the prevalence of self-reported change in alcohol and cannabis consumption. We found that 15.7% of respondents self-reported an increase in alcohol consumption and 5.4% in cannabis consumption since the start of the pandemic. Sociodemographic disparities were also observed, indicating that increased alcohol and cannabis consumption may be more prevalent among certain populations.

Introduction

On 25 January 2020, Canada confirmed its first case of the novel coronavirus (COVID-19) and by early March 2020, community transmission was apparent. Since then, rigorous public health guidelines and measures, such as hand hygiene, mandating masks, school closures and physical distancing protocols, have been implemented in Canada. These public health measures have had a critical role in mitigating the spread of COVID-19 to protect the health of Canadians. However, there is increasing evidence that the pandemic and these ensuing strict public health measures have had a negative impact on the mental health and well-being of Canadians.¹⁻³

Data from the first wave of the COVID-19 pandemic in Canada have shown increased prevalence of stress, anxiety and depression,¹⁻⁵ which are known risk factors for the onset and sustained misuse of substances, such as alcohol⁶⁻⁸ and cannabis.⁹ A study initiated by Mental Health Research Canada found that one-third of participants aged 18 years and above who

reported having a previous diagnosis of anxiety (n = 307) or depression (n = 325) also reported an increase in alcohol and cannabis use during the pandemic.⁴

Furthermore, data collected between 29 March and 3 April 2020 from a national survey of 4383 participants aged 25 years and older indicate that 14% of respondents reported increased alcohol consumption and 5.5% reported increased cannabis consumption during the first wave of the pandemic.¹⁰ Findings from early in the second wave (from 14 to 21 September 2020) among Canadian adults are consistent, with 40% of 3027 participants from one study indicating their mental health had deteriorated since the onset of the pandemic.¹¹ Moreover, during the same period, increased alcohol and cannabis use was reported for 30% and 20%, respectively, of individuals with a pre-existing mental health condition.¹¹ These findings highlight the intricate relationship between mental health and substance use.

These results are a significant and pressing public health concern, suggesting a

Highlights

- From 11 September to 4 December 2020, 15.7% and 5.4% of individuals self-reported an increase in alcohol and cannabis consumption, respectively, compared to before the pandemic.
- Individuals who reported that their mental health was worse now, compared to before the pandemic, had the highest prevalence of self-reported increase in alcohol and cannabis consumption.
- Understanding the social determinants of health is critical to the development of harm reduction and mitigation strategies.

widespread impact of the pandemic on behavioural health.¹² As the country works towards a national recovery plan in response to the repercussions and long-term consequences of the COVID-19 pandemic, more national data on population health behaviours, such as substance use, are needed to help inform public health guidance. Such guidance includes creating public health messages focussed on mitigating harms associated with alcohol and cannabis use. To date, there has been limited national information on alcohol and cannabis consumption during the second wave of the pandemic in Canada. The objective of this At-a-glance article is to (1) estimate the self-reported change in alcohol and cannabis use during the second wave of the COVID-19 pandemic, and (2) disaggregate self-reported increase in

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alcohol and cannabis use by sociodemographic characteristics and self-reported change in mental health.

Methods

Data collection and sampling

We used data from the Survey on COVID-19 and Mental Health (SCMH), which is a cross-sectional survey developed and funded by Statistics Canada and the Public Health Agency of Canada (PHAC). This survey was administered to 30 000 dwellings from 11 September to 4 December 2020 with the purpose of capturing information related to mental health and well-being. A simple random sample was selected for each province and the territorial capitals. Of the 14 689 people who responded to the survey, 84% agreed to share their data with PHAC, resulting in a sample size of 12 344 for this analysis. Individuals living on reserves or other Indigenous settlements, full-time members of the Canadian Armed Forces and individuals in institutions were excluded from the survey coverage. Further detail about the SCMH design and sampling framework can be found on Statistics Canada's website.¹³

Self-reported change in alcohol and cannabis consumption

Respondents were asked, "How has your alcohol consumption changed since before the COVID-19 pandemic?" and "How has your cannabis consumption changed since before the COVID-19 pandemic?" Response options were: "Increased", "Decreased" and "No change". If respondents overlooked or refused to answer the questions, the data were considered as missing and the respondents were excluded from the analysis (n = 43).

Data analysis

We estimated the weighted prevalence (with 95% confidence interval [CI]) of self-reported (1) increased change, (2) decreased change or (3) no change in alcohol and cannabis consumption among individuals aged 18 years and older. Estimates of self-reported increase were disaggregated by gender; age group; income change since COVID-19 (increased, decreased, no change); self-reported household income quintile; number of people in household; being a parent or legal guardian of a child or children under the age of 18 years; education level (less than high school, high school

TABLE 1
Characteristics of respondents in study on changes in alcohol and cannabis consumption since the beginning of the COVID-19 pandemic, Canada, September to December 2020

Variable	Proportion, % (95% CI)
Gender	
Male	49.1 (48.9–49.3)
Female	50.7 (50.6–50.7)
Age group	
18–24 years	9.5 (8.6–10.4)
25–34 years	18.7 (17.8–19.6)
35–44 years	16.8 (16.8–16.8)
45–54 years	15.6 (15.6–15.6)
55–64 years	17.2 (17.2–17.2)
65+ years	22.2 (22.2–22.2)
Income change since COVID-19	
Increased	6.0 (5.3–6.7)
Decreased	37.5 (36.3–38.8)
No change	56.5 (55.2–57.7)
Self-reported total household income quintile	
Q1	21.1 (20.0–22.2)
Q2	20.2 (19.1–21.3)
Q3	22.4 (21.2–23.6)
Q4	18.3 (17.2–19.4)
Q5	18.0 (16.9–19.1)
Province/territorial capital	
British Columbia	13.4 (13.4–13.4)
Alberta	11.4 (11.4–11.4)
Saskatchewan	2.8 (2.8–2.8)
Manitoba	3.3 (3.3–3.3)
Ontario	39.5 (39.5–39.5)
Quebec	22.9 (22.9–22.9)
New Brunswick	2.0 (2.0–2.0)
Nova Scotia	2.6 (2.6–2.6)
Prince Edward Island	0.4 (0.4–0.4)
Newfoundland and Labrador	1.4 (1.4–1.4)
Whitehorse, Yukon	0.1 (0.1–0.1)
Yellowknife, Northwest Territories	0.1 (0.1–0.1)
Iqaluit, Nunavut	0.02 (0.02–0.02)
Place of residence	
Urban	82.3 (81.5–83.1)
Rural	17.7 (16.9–18.5)
Number of people in household	
1	14.5 (14.1–14.9)
2	35.5 (34.8–36.2)
3	17.5 (16.5–18.5)
4	18.6 (17.4–19.7)
5 and more	13.9 (12.7–15.1)

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graduate, postsecondary graduate); self-identification as part of a racialized group (yes/no); immigrant status; province/territorial capital; place of residence (urban/rural); and self-reported changes in mental health compared to before the pandemic.

Survey sampling weights were provided by Statistics Canada to generate nationally representative estimates. Variance was estimated using the bootstrap method, and SAS Enterprise Guide version 7.1 (SAS Institute Inc., Cary, NC, USA) was used for statistical analyses. Chi-square tests were conducted to examine significant associations between sociodemographic variables, self-reported mental health and alcohol and cannabis consumption behaviours.

Results

Based on nationally representative data, 15.7% of individuals self-reported an increase in alcohol consumption, 9.9% self-reported a decrease and 74.3% self-reported no change. For cannabis, 5.4% self-reported an increase in consumption, 1.8% self-reported a decrease, 19.5% self-reported no change and 73.3% self-reported never using cannabis. The prevalence estimates for increased alcohol or cannabis consumption varied after disaggregation. Statistically significant differences are highlighted in the Results section of this article, and all estimates can be found in Tables 1 and 2.

Alcohol consumption

The prevalence of self-reported increased alcohol consumption was higher among individuals aged 35 to 44 years (21.9%) and 45 to 54 years (21.0%), those with a postsecondary education (18.4%), and individuals who reported a change in their household income since COVID-19 (18.5% increased income, 19.1% decreased income). The prevalence of self-reported increased alcohol consumption augmented by income quintile (ranging from 7.5% to 27.2%). Yellowknife, Northwest Territories, (22.5%) had the highest prevalence of self-reported increase in alcohol consumption, while Prince Edward Island (11.0%) had the lowest prevalence. The percentage of self-reported increase in alcohol consumption was higher for individuals living in an urban area (16.2%), living in a household with four people (20.8%), parents or legal guardians of children under the age of 18 years (22.6%), born in Canada (“non-immigrants”) (18.2%) and people who

TABLE 1 (continued)
Characteristics of respondents in study on changes in alcohol and cannabis consumption since the beginning of the COVID-19 pandemic, Canada, September to December 2020

Variable	Proportion, % (95% CI)
Parent/legal guardian of a child or children under 18 years	
Yes	27.6 (26.6–28.5)
No	72.4 (71.5–73.4)
Education level	
Less than high school	7.6 (6.9–8.3)
High school graduate	23.6 (22.4–24.8)
Postsecondary graduate	68.8 (67.5–70.0)
People who self-identify as part of a racialized group	
Yes	24.3 (23.1–25.4)
No	75.7 (74.6–76.9)
Immigrant	
Yes	25.6 (24.4–26.8)
No	73.0 (71.8–74.1)
Non-permanent resident	1.4 [†] (1.1–1.8)
Self-rated mental health compared to before the COVID-19 pandemic	
Much better now/somewhat better now	7.6 (6.8–8.3)
About the same	59.0 (57.6–60.3)
Much worse now/somewhat worse now	33.5 (32.2–34.8)
Self-reported change in alcohol consumption	
Increased	15.7 (14.7–16.7)
Decreased	9.9 (9.1–10.8)
No change	74.3 (73.2–75.5)
Self-reported change in cannabis consumption	
Increased	5.4 (4.8–6.1)
Decreased	1.8 (1.4–2.1)
No change	19.5 (18.4–20.5)
Never used cannabis	73.3 (72.1–74.5)

Data source: 2020 Survey on COVID-19 and Mental Health.

Abbreviations: CI, confidence interval; Q, quintile.

[†] As per the Survey on COVID-19 and Mental Health release guidelines, prevalence estimates should be interpreted with caution, as the unweighted total sample size is between 75 and 150. Please look at the confidence intervals when interpreting these estimates.

did not identify as being part of a racialized group (17.8%). Lastly, the rate of increased alcohol consumption was highest among people who reported that their mental health was much worse or somewhat worse now compared to before the COVID-19 pandemic (27.0%).

Cannabis consumption

The prevalence of self-reported increased cannabis consumption was higher for males (5.8%), non-immigrants (6.3%), people who reported that their income had decreased (7.9%) since the beginning of COVID-19 pandemic and individuals who self-reported that their mental health

was much worse now/somewhat worse now (10.0%). Self-reported increased cannabis consumption decreased by age (ranging from 12.1% to 1.0%), was highest in Nova Scotia (7.8%) and lowest in Saskatchewan (3.0%).

Discussion

Overall, we found that 15.7% of individuals living in Canada self-reported an increase in their alcohol consumption and 5.4% self-reported an increase in their cannabis consumption during the second wave of the COVID-19 pandemic. Self-reported increase in alcohol and cannabis use were disaggregated by sociodemographic

TABLE 2
Percentage of self-reported increase in alcohol and cannabis consumption since COVID-19, disaggregated by sociodemographic characteristics, adults aged 18 years and older, Canada, September to December 2020

Variable	% of self-reported increase in alcohol consumption (95% CI)	p-value	% of self-reported increase in cannabis consumption (95% CI)	p-value		
Gender						
Male	15.2 (13.8–16.6)	0.5902	5.8 (4.8–6.8)	< 0.001		
Female	16.2 (14.9–17.5)		4.9 (4.1–5.8)			
Age group						
18–24 years	14.1 (10.0–18.3)	< 0.001	12.1 (8.0–16.1)	< 0.001		
25–34 years	18.2 (15.5–20.8)		9.8 (7.7–12.0)			
35–44 years	21.9 (19.6–24.3)		6.0 (4.6–7.4)			
45–54 years	21.0 (18.4–23.7)		4.4 (3.2–5.7)			
55–64 years	13.8 (11.9–15.7)		3.1 (2.2–3.9)			
65+ years	7.3 (6.0–8.6)		1.0 (0.5–1.4)			
Income change since COVID-19						
Increased	18.5 (14.3–22.6)	< 0.001	5.4 (2.8–8.0)	< 0.001		
Decreased	19.1 (17.2–20.9)		7.9 (6.5–9.3)			
No change	13.3 (12.2–14.3)		3.8 (3.1–4.5)			
Self-reported total household income quintile						
Q1	7.5 (6.0–9.0)	< 0.001	4.2 (3.0–5.4)	0.1351		
Q2	12.7 (10.7–14.7)		5.0 (3.7–6.4)			
Q3	15.9 (13.8–18.1)		6.5 (4.7–8.2)			
Q4	21.1 (18.5–23.8)		6.7 (5.1–8.2)			
Q5	27.2 (24.2–30.2)		5.6 (3.7–7.4)			
Province/territorial capital						
British Columbia	19.2 (16.6–21.8)	0.0013	5.0 (3.4–6.6)	< 0.001		
Alberta	17.0 (14.4–19.7)		6.0 (4.4–7.6)			
Saskatchewan	15.3 (14.5–18.1)		3.0 (1.6–4.3)			
Manitoba	16.2 (13.5–18.8)		5.2 (3.6–6.8)			
Ontario	14.9 (13.1–16.6)		6.5 (5.1–7.8)			
Quebec	14.7 (12.9–16.5)		3.8 (2.7–4.9)			
New Brunswick	14.1 (11.5–16.7)		5.1 (3.2–7.0)			
Nova Scotia	16.5 (13.4–19.5)		7.8 (5.6–9.9)			
Prince Edward Island	11.0 (8.4–13.5)		5.5 (3.5–7.4)			
Newfoundland and Labrador	14.0 (11.1–16.9)		4.1 (2.5–5.8)			
Whitehorse, Yukon	17.7 (13.8–21.6)		5.3 (2.9–7.6)			
Yellowknife, Northwest Territories	22.5 (17.1–27.9)		5.9 (3.1–8.6)			
Iqaluit, Nunavut	18.0 (12.1–23.9)		6.4 (2.5–10.3)			
Place of residence						
Urban	16.2 (15.1–17.3)		0.0105		5.6 (4.8–6.3)	0.3146
Rural	13.1 (11.2–15.1)	4.7 (3.3–6.1)				
Number of people in household						
1	11.9 (10.4–13.4)	< 0.001	5.3 (4.2–6.3)	0.3663		
2	13.5 (12.2–14.8)		4.9 (4.1–5.8)			
3	17.1 (14.6–19.6)		5.1 (3.6–6.6)			
4	20.8 (18.0–23.5)		6.9 (4.8–9.0)			
5 and more	17.0 (13.6–20.4)		5.5 (3.2–7.8)			

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TABLE 2 (continued)
Percentage of self-reported increase in alcohol and cannabis consumption since COVID-19, disaggregated by sociodemographic characteristics, adults aged 18 years and older, Canada, September to December 2020

Variable	% of self-reported increase in alcohol consumption (95% CI)	p-value	% of self-reported increase in cannabis consumption (95% CI)	p-value
Parent/legal guardian of a child or children under 18 years				
Yes	22.6 (20.6–24.5)	< 0.001	4.8 (3.8–5.7)	0.1749
No	13.1 (12.0–14.2)		5.7 (4.8–6.5)	
Education level				
Less than high school	4.9 (3.2–6.6)	< 0.001	3.6 (0.9–6.3)	0.3849
High school graduate	11.5 (9.5–13.5)		5.3 (3.9–6.7)	
Postsecondary graduate	18.4 (17.2–19.6)		5.7 (4.9–6.5)	
People who self-identify as part of a racialized group				
Yes	9.4 (7.4–11.4)	< 0.001	5.1 (3.5–6.8)	0.6659
No	17.8 (16.7–18.9)		5.5 (4.8–6.2)	
Immigrant				
Yes	8.8 (7.3–10.4)	< 0.001	3.1 (1.8–4.4)	0.0024
No	18.2 (17.1–19.4)		6.3 (5.5–7.1)	
Non-permanent resident	14.5 [‡] (2.4–26.6)		6.6 [‡] (0.2–12.9)	
Self-rated mental health compared to before the COVID-19 pandemic				
Much better now/somewhat better now	13.6 (10.3–16.9)	< 0.001	8.8 (5.0–12.6)	< 0.001
About the same	9.5 (8.6–10.5)		2.4 (1.8–3.0)	
Much worse now/somewhat worse now	27.0 (24.9–29.1)		10.0 (8.5–11.5)	

Data source: 2020 Survey on COVID-19 and Mental Health.

Abbreviations: CI, confidence interval; Q, quintile.

[‡] As per the Survey on COVID-19 and Mental Health release guidelines, prevalence estimates should be interpreted with caution, as the unweighted total sample size is between 75 and 150. Please look at the confidence intervals when interpreting these estimates.

characteristics and self-reported change in mental health, providing additional evidence of the wider impacts of the pandemic. Our result for cannabis was consistent with the increase reported early in the pandemic from 29 March to 3 April 2020 (first wave) in the Canadian Perspective Survey Series (CPSS) (5.5%).¹⁰ Our estimate of increased alcohol consumption was slightly higher than what was found in series 1 of the CPSS (14%).¹⁰

Once disaggregated, results differed by various sociodemographic variables, which indicates potential disparities for certain groups. The increase in consumption of alcohol and cannabis differed significantly by age group, province and change in household income since the beginning of the COVID-19 pandemic. Interestingly, the number of individuals who self-reported an increase in alcohol consumption increased with age, whereas increases in cannabis consumption appeared to decrease with age. Moreover, individuals who rated their mental health as much worse/somewhat worse compared to before the COVID-19 pandemic also had a

higher proportion of increased alcohol (27%) and cannabis consumption (10%) compared to those who rated their mental health as about the same, or much better/somewhat better now. This result is consistent with existing literature^{4,11} and highlights the complex relationship between mental health and alcohol and cannabis use.

We also observed substance-specific differences. Among those who self-reported an increase in alcohol consumption, significant differences were observed by household income quintile, place of residence (urban/rural), size and composition of household, and racialized groups. Interestingly, gender differences were not observed for alcohol use. Among those who self-reported an increase in cannabis consumption, proportionally more men reported an increase in cannabis consumption compared to women.

It is important to note that these estimates are representative of the entire survey population, including people who have never used alcohol or cannabis. These

results would likely vary significantly if we restricted our sample to respondents who had used these substances before. As Canada is currently in the recovery stage, subsequent studies should continue monitoring alcohol and cannabis consumption for the entire population, which includes non-consumers, but also specifically for individuals who do consume these substances to inform public health prevention and harm reduction strategies. Future research evaluating certain policies that may have contributed to increased alcohol and cannabis use (for example, access to alcohol through home deliveries) is also warranted.

Conclusion

During the second wave of the COVID-19 pandemic in Canada, an estimated 15.7% of Canadians self-reported an increase in their consumption of alcohol and 5.4% an increase in their consumption of cannabis. These nationally representative estimates varied by sociodemographic characteristics, which indicates the importance of understanding the social determinants of

health. Future studies should focus on the association between the determinants and substance use during COVID-19 to help identify the at-risk populations that may benefit from increased awareness, mitigation efforts and resources pertaining to alcohol- and cannabis-related harms.

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Conflicts of interest

The authors have no conflicts of interest to disclose.

Authors' contributions and statement

MV, KHM, NH and MB drafted this At-a-glance article. MV did the statistical analyses. All co-authors interpreted the data, and revised the article.

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