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MEDICINE & DENTISTRY

Impact of COVID-19 on Alcohol Use and Driving and Cannabis Use Driving: A Population-based Survey of Ontario Drivers

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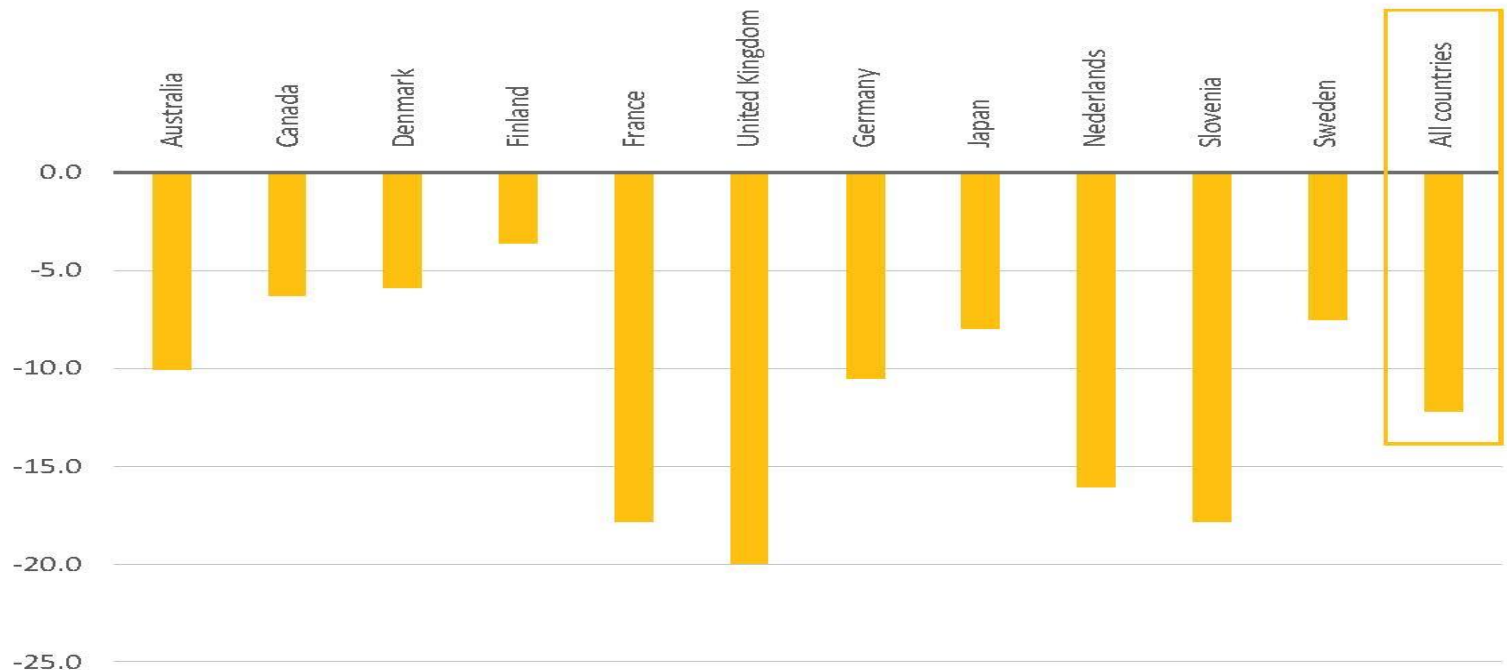
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Introduction

- March 2020, the WHO declared Coronavirus Disease 2019 (COVID-19) a pandemic.

Figure 4. How total travel distance dropped during the pandemic
(Vehicle-kilometres travelled in 2020 in eleven countries, % change on 2017-19 average)



International Transport Forum (2021) Road Safety Annual Report 2021: The Impact of Covid-19, OECD Publ, Paris

Traffic fatalities generally reduced

➤ Countries showing decreases:

Argentina; Australia; Austria; Belgium; Canada; Chile; Columbia; Czech Republic; Denmark; Finland; France; Germany; Greece; Hungary; Israel; Italy; Japan; Korea; Lithuania; Luxembourg; Namibia; Netherlands; New Zealand; Norway; Poland; Portugal; Serbia; Slovenia; Spain, Sweden; Turkey; United Kingdom

➤ Countries showing increases:

Ireland, Switzerland, United States

COVID-19 Transport Canada data 2020

- Number of motor vehicle fatalities = 1,745; down 1% from 2019.
- Number of fatalities per billion vehicle kilometres travelled (VKT) increased to 4.7 (4.4 in 2019).
- Number of serious injuries = 7,868; down 12% from 2019.
- 32% increase in number of occupants killed or seriously injured not wearing seatbelts in 2020 compared to 2019.

[Canadian Motor Vehicle Traffic Collision Statistics: 2020 \(canada.ca\)](https://www.canada.ca/en/transport-canada/services/statistics/collision-statistics/2020)

Driving after alcohol or drug use during COVID-19

- 2.4% drivers reported drinking and driving more, 22.1% less during the pandemic than before in Canada.
- 7.6% drivers reported drinking and driving more, 23.7% less during the pandemic than before in USA.
- 2.2% drivers reported driving after drug use more, 20.6% less during the pandemic than before in Canada.
- 6.2% drivers reported driving after drug use more, 22.7% less during the pandemic than before in USA.

Vanlaar et al. 2021 The impact of COVID-19 on road safety in Canada and the United States, *Accident Analysis and Prevention*, 160, 106324

Impaired Driving during COVID-19

- Purpose of this study: conduct a population-based panel survey of Ontario drivers to examine self-reported changes in driving after alcohol and cannabis use and correlates during COVID-19.
- Current study examined effects of socio-demographics psychological factors, and substance use in analyses.

Methods

- Survey developed using “Expert Panel” method.
- Online panel survey – conducted by Survey Research Centre at the University of Waterloo (Oct 20 – Nov 30, 2021).
- Sampling by quotas: age (16-17; 18-24; 25-34; 35-44; 45-54; 55-64; 65-79 and 80+), sex and type of community.
- Sample obtained (n=1,595), Response Rate 17.3%
- Sampling weights to approximate non-institutionalized Ontario adult population.

Measures

- Outcome variables:
 - driving after having 2 or more drinks of alcohol in past hour;
 - driving within 2 hours of using cannabis;
 - driving after having 2 or more drinks of alcohol and using cannabis;
 - ≥ 1 collisions.

- Correlates (independent variables):
 - Demographics (age, gender),
 - Driving frequency,
 - Region lived (rural (<1,000), small (1,000-29,999), medium (30,000-99,999), large (>100,000)),
 - Kessler 6 Distress Scale (distress cutoff>12),
 - Competitive Attitude Toward Driving Scale (CATDS), 5-item rating scale (It's fun to beat other drivers when the light changes; it's a thrill to out-manoeuvre other drivers; taking risks in traffic makes driving more fun...)
 - Changes in alcohol and cannabis use.

Results

➤ Quota sampling matched to Ontario population

Age	Frequency	Percent (N = 1595)
16-17	43	2.7
18-24	168	10.5
25-34	242	15.2
35-44	273	14.9
45-54	237	17.1
55-64	279	17.5
65-79	272	17.1
80+	81	5.1

Results

➤ Quota sampling matched to Ontario population

Gender and Region	Frequency	Percent (N = 1595)
GENDER		
Male	782	49.0
Female	813	51.0
REGION		
Large urban centre (100,000+)	1065	66.8
Medium urban centre (30,000-99,999)	158	9.9
Small urban centre (1,000-29,999)	165	10.3
Rural area (<1,000)	207	13.0

Results

- In the last 3-month period, compared to before the pandemic, **have you been driving...**

Response	Percent (N = 1595)
A lot less often	20.8%
Somewhat less often	27.6%
The same	30.7%
Somewhat more often	16.4%
A lot more often	4.5%

Results

- **SINCE THE START OF THE PANDEMIC (March 2020 onward), how often, if at all, have you engaged in the following activities compared to before the pandemic? **Driving after having 2 or more drinks of alcohol in the previous hour****

Response	Percent (N = 1595)
A lot/somewhat less often	6.2%
The same	6.8%
A lot/somewhat more often	3.3%
Do not engage in activity	83.6%

Results

- **SINCE THE START OF THE PANDEMIC (March 2020 onward), how often, if at all, have you engaged in the following activities compared to before the pandemic? **Driving within 2 hours of using cannabis****

Response	Percent (N = 1595)
A lot/somewhat less often	5.1%
The same	6.0%
A lot/somewhat more often	3.5%
Do not engage in activity	85.4%

Results

- **SINCE THE START OF THE PANDEMIC (March 2020 onward), how often, if at all, have you engaged in the following activities compared to before the pandemic? **Driving within 2 hours after having 2 or more drinks of alcohol and using cannabis****

Response	Percent (N = 1595)
A lot/somewhat less often	5.0%
The same	6.0%
A lot/somewhat more often	2.6%
Do not engage in activity	86.3%

Results

- **SINCE THE START OF THE PANDEMIC (March 2020 onward), how often, if at all, were you **involved in a collision** involving any kind of damage to a vehicle, or injury to you or another person while you were driving?**

Response	Percent (N = 1595)
0	93.5%
1	4.8%
2-3	1.4%
4 or more	0.3%

Logistic regression: Correlates of reporting **more frequent driving within 2 hours of having 2 or more drinks** since start of pandemic.

Variables	Odds ratio	P value
Age	0.97	0.01
Gender (F = 0, M = 1)	0.83	0.59
Km driven	1.00	0.13
Small urban centre ¹	1.03	0.97
Medium urban centre ¹	0.54	0.42
Large urban centre ¹	0.78	0.70
Competitive Driving Scale	1.31	0.00
Kessler6 Distress Scale (distress \geq 13)	1.20	0.60
Alcohol use more often during pandemic	1.94	0.07
Use of cannabis during pandemic	3.32	0.00

1 Reference group = rural area;

Logistic regression: Correlates of reporting **more frequent driving within 2 hours of using cannabis** since start of pandemic.

Variables	Odds ratio	P value
Age	0.98	0.04
Gender (F = 0, M = 1)	1.41	0.38
Km driven	1.00	0.02
Small urban centre ¹	0.91	0.94
Medium urban centre ¹	2.73	0.24
Large urban centre ¹	2.17	0.34
Competitive Driving Scale	1.27	0.00
Kessler6 Distress Scale (distress \geq 13)	1.59	0.21
Alcohol use more often during pandemic	1.41	0.30
Use of cannabis during pandemic	3.05	0.00

1 Reference group = rural area;

Logistic regression: Correlates of reporting **more frequent driving within 2 hours of drinking and using cannabis** since start of pandemic.

Variables	Odds ratio	P value
Age	1.00	0.88
Gender (F = 0, M = 1)	1.26	0.62
Km driven	1.00	0.00
Small urban centre ¹	1.68	0.46
Medium urban centre ¹	1.13	0.80
Large urban centre ¹	0.60	0.44
Competitive Driving Scale	1.34	0.00
Kessler6 Distress Scale (distress \geq 13)	1.19	0.69
Alcohol use more often during pandemic	1.80	0.14
Use of cannabis during pandemic	5.79	0.00

¹ Reference group = rural area;

Logistic regression: Correlates of reporting **one or more collisions since start of pandemic.**

Variables	Odds ratio	P value
Age	0.99	0.32
Gender (F = 0, M = 1)	1.05	0.83
Km driven	1.00	0.48
Rural	No cases	
Small centre ¹	1.68	0.80
Medium urban centre ¹	1.31	0.44
Competitive Driving Scale	1.11	0.00
Kessler6 Distress Scale (distress \geq 13)	1.30	0.34
Alcohol use more often during pandemic	1.59	0.06
Use of cannabis during pandemic	2.21	0.00

1 Reference group = large urban area;

Discussion

- Almost half respondents reported driving less in last 3 months compared to pre-pandemic.
- One fifth reported driving more.
- Majority did not report driving after alcohol use, cannabis use or using both.
- Since the start of the pandemic, about 3% reported engaging in more frequent driving after alcohol use, cannabis use, or both.

Discussion

- Still translates to about 250,000 Ontario drivers driving more frequently after alcohol use, cannabis use or both.
- Those who reported more frequent driving after alcohol use or cannabis use since the start of the pandemic, had higher odds of being younger.
- Competitive attitudes toward driving was a significant predictor of self-reported more frequent driving after alcohol use, cannabis use, both and reported collisions since the start of the pandemic.

Discussion

- Self-reported cannabis use was a significant predictor of self-reported more frequent driving after alcohol use, cannabis use, both and collisions since the start of the pandemic.
- Self-reported increased alcohol use since the pandemic only approached significance as predictor for more frequent driving after alcohol use, and collisions since the start of the pandemic.
- Interventions need to tackle competitive driving attitudes and cannabis and alcohol use.

Limitations

- Cross-sectional survey – causality and trends cannot be determined.
- Self-report (social desirability).
- Some small cell sizes (unstable effects).
- Although sampling weights by age, gender and region were computed to approximate non-institutionalized Ontario adult population, we subsequently selected for licensed drivers who had driven in past year.

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