

COVID-19 Distancing Behaviours Among Non-Vaccinated and Recreational Drug Using Canadians: A Predictive Analysis

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Abstract

Introduction: Concerns due to the COVID-19 pandemic have increased drug use among Canadians. Five commonly used drugs in Canada are: cannabis, cocaine, hallucinogens, heroin, and methamphetamines (meth). The use of drugs has impacted social distancing behavior.

Research significance: This study investigates the association between distancing and drug use for unvaccinated Canadian adults. This insight aims to close the knowledge gap regarding substance-use related COVID-19 distancing patterns. Future interventions can then better address the distancing behaviors of different drug users and reduce the spread of COVID-19.

Methods: Data was obtained via the Canadian Social Connections Survey. Vaccinated participants, missing/NA values, and participants below the age of 19 were removed for a total of 2448 observations in the data set.

Results: In the multivariable model, use of cocaine at least once a week (OR = 7.55, 95% CI), use of hallucinogens at least once a month (OR = 0.0955, 95% CI), age cohort of Generation X (OR = 0.10, 95% CI) and Baby Boomers (OR = 0.245, 95% CI) were statistically significant predictors of COVID-19 distancing. Interaction between age cohorts and cocaine use was conducted and found to be statistically different and superior.

Conclusion: Substance use is not a strong predictor of COVID-19 distancing. Other confounders should be investigated to better predict the outcome of COVID-19 distancing across explanatory substance use variables. Then, we can alter the interventions required to address confounding factors that may exist for unsafe COVID-19 behaviors.

Keywords: social distancing, drug use, unvaccinated, COVID-19

The changes brought forth by the COVID-19 pandemic have led Canadians to cope in a variety of ways such as substance use. For those who consumed recreational substances prior to the COVID-19 pandemic, substance use has increased substantially and is correlated to managing concerns regarding the pandemic (Taylor et al., 2021). To reduce the spread of the SARS-CoV-2 virus, social distancing has been heavily encouraged. Social distancing is defined as maintaining at least six meters of distance between oneself and others (Centers for Disease Control and Prevention, 2021). Adults who practice social distancing help slow the spread of COVID-19 and prevent outbreaks of the disease (Bielecki et al., 2020). Therefore, it is imperative for Canadians to be practicing social distancing in order to keep themselves and others safe while mitigating the spread of the pandemic.

A study conducted with Canadian adolescents found that not only has there been an increased consumption of alcohol and cannabis during the COVID-19 pandemic, but also, nearly a quarter of adolescent users were consuming substances face-to-face with peers (Dumas et al., 2020). This suggests that substance use—a potential coping mechanism for the worries created by the pandemic—may be creating face-to-face interactions and reducing the practice of social distancing. Given that Canadian adolescents have been studied with regard to social distancing and substance use, this study aims to fill the knowledge gaps for Canadian adults by investigating social distancing and substance use as practiced by Canadian adults in the COVID-19 pandemic (Craig et al., 2023). Additionally, previous literature has not solely focused on non-vaccinated populations. By removing vaccinated participants from this study, this paper also aims to provide findings that can be applied to reduce the spread of COVID-19 in a sector of the population that is at a higher risk than their fellow vaccinated counterparts.

The hypothesis for this study follows the findings of the study completed with Canadian adolescents: non-vaccinated Canadian adults who use recreational substances more frequently will be more likely to defy social distancing practices, regardless of the choice of drug.

Materials and Methods

The data used in this study was sourced from the Canadian Social Connection Survey (CSCS) which consisted of using a serial cross-sectional survey with a longitudinal sub-cohort to investigate the health and well-being of Canadians during the COVID-19 pandemic (CSCS, n.d.). The data was collected from April 21, 2021, Wave 1 of the COVID-19 pandemic to June 1, 2021, during the third wave (CSCS, n.d.).

Participants

As this study chose to focus on non-vaccinated Canadian adults (19 years of age or older), the vaccinated participants (having received either one or two doses) and participants below the age of nineteen were removed from the study data. Missing and NA values were removed to ensure that only real responses to the explanatory variables would be utilized in this study. In total, this accounted for 208 observations for 12 chosen variables and each variable had a study sample of 208.

Measures

The CSCS data had 2448 observations for 406 variables, but the portion of data included in this study consisted of 208 observations across the following 12 variables: gender, age, income, ethnicity, self-rated mental health, self-rated physical health, cannabis usage, cocaine usage, meth usage, hallucinogens usage, heroin usage and COVID-19 distancing.

Outcome Variable

The variable “covid_distancing” measured the extent of physically distancing oneself by two meters from others and so, it was chosen as the outcome variable.

Primary Explanatory Variables

The chosen primary explanatory variables were cannabis usage, cocaine usage, meth usage, hallucinogen usage and heroin usage because the World Drug Report of 2001 has shown that the most used drugs worldwide are cannabis (80% drug users), methamphetamine or hallucinogens (16% drug users), cocaine (8% drug users) and heroin (5% drug users) (Department of Justice, 2022). Cannabis is also the most commonly used substances in Canada (Government of Canada, 2018).

Demographic and Confounding Variables

The variables gender, age, income, and ethnicity were included in the study data to provide a socioeconomic description of the study sample. These variables were also included as confounders that may affect how frequency of certain substance use differs based on previous studies' findings. For instance, literature has shown that men were more likely than women to use almost all types of recreational substances (National Institute on Drug Abuse, 2021). Similarly, recreational drug use was found to be the most prevalent for the group ages 50-64 and thus, age cohorts were included in the study (Koechl et al., 2012). Other findings indicate that certain ethnicity groups such as White and Hispanic populations are more likely to use substances than other ethnicities (McCabe et al., 2007). There has been conflicting data found for the effect of income on drug use as some data suggests lower income is related to more frequent recreational substance use, while a positive relationship for recreational drug use and income has also been found (Patrick et al., 2012). Therefore, the income variable was included to further investigation in this study. Lastly, the variables self-rated physical health and self-rated mental

health were included with the rationale that these two variables may be related to how often users use substances and how closely people follow the COVID-19 distancing guidelines.

Data Analysis

The total sample size of this study consisted of 208 participants with the median age of 35 years. Before analyzing the data, age was converted into the factor variable of age cohorts with the majority (49.5%) of the sample being Millennials (ages 25-40). Income was broken into \$30,000 bracket groups, as seen in Table 1, and the majority of the sample consisted of the \$60,000 to \$89,999 income group. For simplicity and organization, which can be noted in Table 1, each of the five recreational drug use variables were re-assigned into 3 levels: “At least once a week”, “At least once a month” or “Less than once a month.” Ethnicity was re-assigned from specific to broader levels for simplicity and organization. For instance, Chinese, Japanese and Korean participants were re-assigned as East Asian participants. The majority (73.6%) of the sample consisted of the White ethnicity.

Next, bivariable and multivariable models were created. For the multivariable models, fit was calculated for each model and compared. Aside from heroin which was a limitation of the polr function—a function used to create the fit for the regression model—the final model contained all of the explanatory factors. Lastly, an interaction was analyzed between cocaine use and age cohorts, with respect to COVID-19 distancing.

Results

A chi-squared test was used for bivariate association, and it did not show any statistical significance between the outcome variable (COVID-19 distancing) and each of the five primary explanatory variables (cannabis usage, cocaine usage, methamphetamine usage, hallucinogens usage, heroin usage). Cramer’s V test confirmed no strong association for these bivariate

association testing. This bivariate association and chi-squared p-values are summarized in Table 2 which illustrates the descriptive statistics computed for the other confounding variables stratified to different levels of the COVID-19 distancing variable. Of these variables, age cohorts, gender, income group and self-rated physical health showed statistically significant associations between COVID-19 distancing and each confounder variable as tested by the chi-squared test. However, Cramer's V test confirmed a weak association for each of these associations. For each recreational drug variable, a majority of the sample reported using the recreational substance for less than once a month.

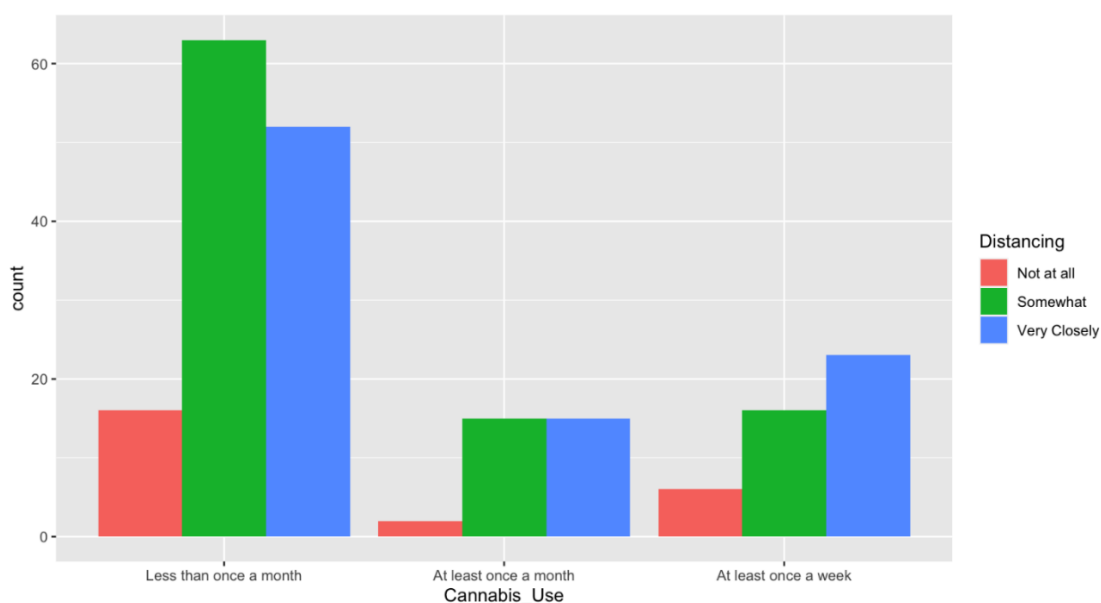


Fig. #1. Bar Plot of COVID-19 Distancing Practice of Cannabis Using Canadians

For drug use of cannabis, 13.3% of participants who used cannabis at least once a week reported “not at all following COVID-19 distancing”, 35.6% reported “somewhat following COVID-19 distancing” and 51.1% reported “following COVID-19 distancing guidelines very closely” (Table 2).

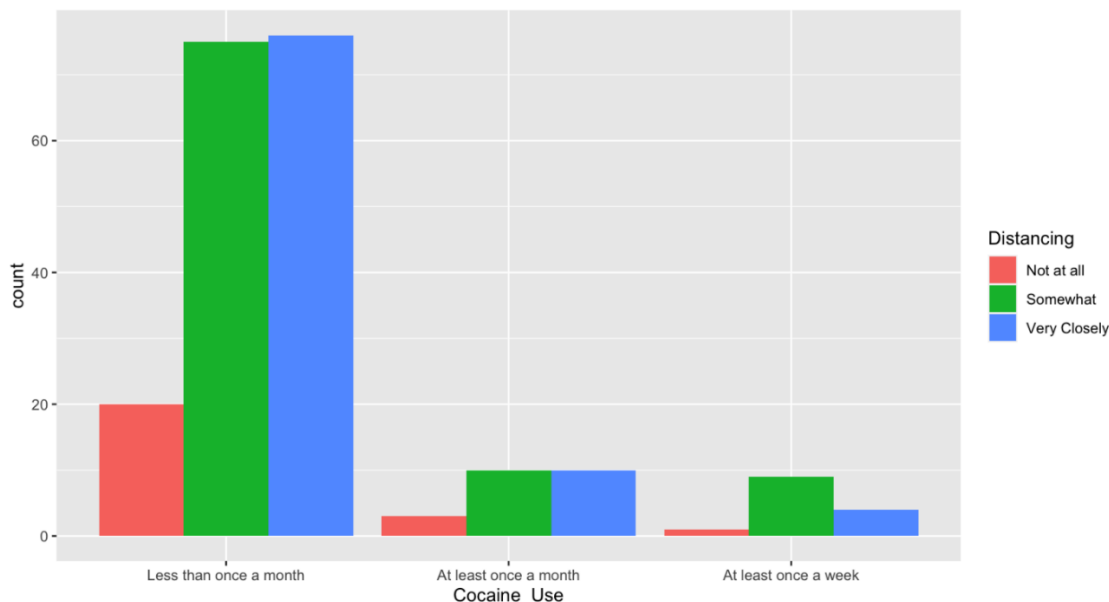


Fig. #2. . Bar Plot of COVID-19 Distancing Practice of Cocaine Using Canadians

7.1% of participants who used cocaine at least once a week reported “not at all following COVID-19 distancing”, 64.3% reported “somewhat following COVID-19 distancing” and 28.6% reported “following COVID-19 distancing guidelines very closely” (Table 2).

For drug use of hallucinogens, 10% of participants who used hallucinogens at least once a week reported “not at all following COVID-19 distancing”, 50% reported “somewhat following COVID-19 distancing and 40% reported “following COVID-19 distancing guidelines very closely” (Table 2) of hallucinogens usage.

For drug use of heroin, 22.2% of participants who used heroin at least once a week reported “not at all following COVID-19 distancing”, 44.4% reported “somewhat following COVID-19 distancing” and 33.3% reported “following COVID-19 distancing guidelines very closely” (Table 2).

For drug use of methamphetamine, 11.1% of participants who used meth at least once a week reported “not at all following COVID-19 distancing”, 55.6% reported “somewhat following COVID-19 distancing” and 33.3% reported “following COVID-19 distancing guidelines very closely” (Table 2).

For the bivariable logistic regression models, the reference level for age cohort was Generation Z (19-24 years old), man for Gender, White for Ethnicity Group, less than \$30,000 for income group, poor for self-rated mental health and self-rated physical health, and less than once a month for cannabis usage, cocaine usage, meth usage, hallucinogens usage, heroin usage. Coefficients converted into odds ratios with 95% confidence intervals have been listed in Table 2 for each bivariable logistic regression model. Significant odds ratios were noted with “*” for Baby Boomers (ages 57-75), (0.178), woman (1.85), income group \$30,000-\$59,999 (0.444), income group \$60,000 - \$89,999 (0.469), good self-rated mental health (0.363) and excellent self-rated mental health (0.303), all with 95% confidence intervals.

In the bivariable models shown in Table 3, the odds ratio of 0.679 (95% CI) found Millennials to be 32.1% less likely to closely follow COVID-19 distancing than Generation Z. The odds ratio of 1.85 (95% CI) indicated that women were 85% more likely to closely follow COVID-19 distancing than men. Odds ratio of 1.47 (95% CI) indicated that East Asian and Middle Eastern unvaccinated Canadian adults were 47% more likely to follow COVID-19 distancing than White unvaccinated Canadian adults. Those belonging to the income group \$30,000-\$59,999 (OR = 0.444, 95% CI) were 66.6% less likely to closely follow COVID-19 distancing than those in the income group less than \$30,000. Those with excellent self-rated mental health (OR = 0.303, 95% CI) were 69.7% less likely to closely follow COVID-19 distancing than those with poor self-rated mental health. Those with excellent self-rated physical

health (OR = 0.300, 95% CI) were 70% less likely to closely follow COVID-19 distancing than those with poor self-rated physical health.

For the bivariable model of cannabis use, those who used cannabis at least once a week were 43% more likely to practice COVID-19 distancing more closely than those who used cannabis less than once a month (OR = 1.43, 95% CI). Those who used cocaine at least once a week were 31.7% less likely to practice COVID-19 distancing more closely than those who used cocaine less than once a month (OR = 0.683, 95% CI). Those who used hallucinogens at least once a week were 1.8% less likely to practice COVID-19 distancing more closely than those who used hallucinogens less than once a month (OR = 0.982, 95% CI). Those who used heroin at least once a week were 42.5% less likely to practice COVID-19 distancing more closely than those who used heroin less than once a month (OR = 0.575, 95% CI). Those who used meth at least once a week were 27.2% less likely to practice COVID-19 distancing more closely than those who used meth less than once a month (OR = 0.728, 95% CI).

In the chosen multivariable logistic regression model, the variables age cohort, gender, ethnicity group, income group, self-rated mental health, self-rated physical health, cannabis use, cocaine use, hallucinogens use, and meth use were included (Table 3). The variable of heroin usage was excluded for simplicity. Controlling for the other variables, the multivariable model showed the largest effect measure for “at least once a month use of hallucinogens”. Controlling for the other variables in the multivariable model, those who use hallucinogens at least once a month were 655% more likely to practice COVID-19 distancing more closely than those who used hallucinogens less than once a month (OR = 7.55, 95%).

The interaction model plot was found to be a superior model than the chosen multivariable logistic regression model as it had a lower Akaike information criterion (AIC)

(434.6470, 435.8857, respectively) and the likelihood ratio test showed a statistically significant ($p = 0.04685$) difference between the interaction model and the no interaction model (Figure 3). This suggests that age cohorts influence the relationship between COVID-19 distancing (numeric) and cocaine usage.

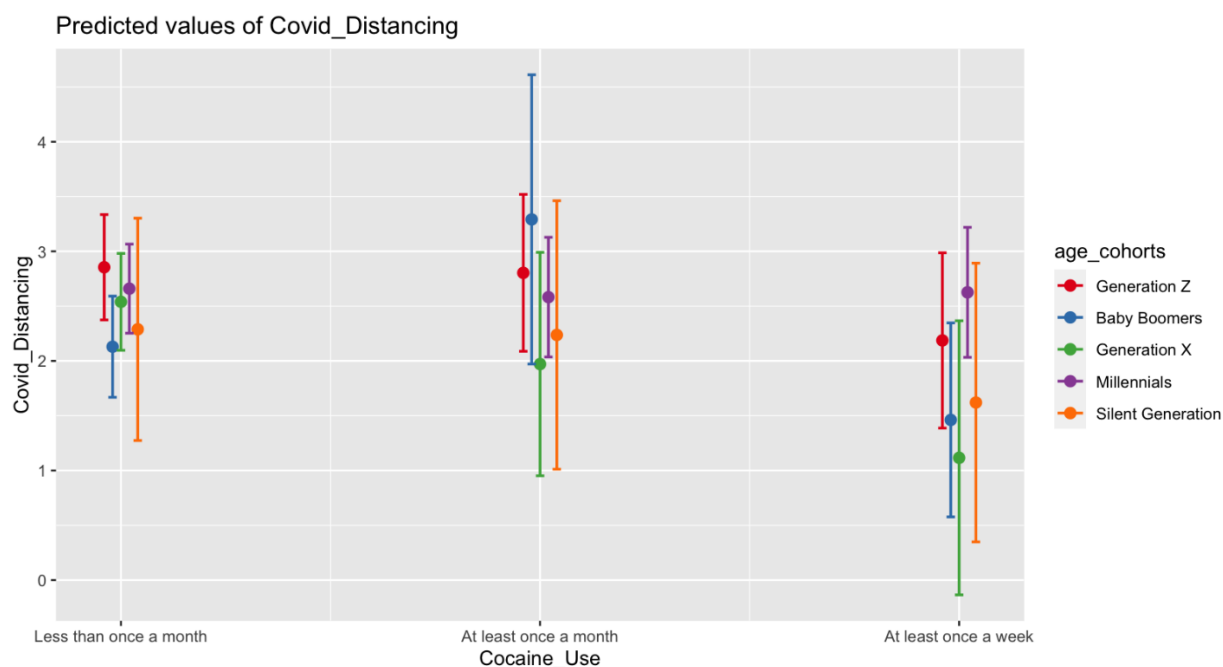


Fig. #3. Interaction Model Plot

Interaction was created between the variable's cocaine use and age cohorts, with relation to the outcome of COVID-19 distancing.

Discussion

The bivariable model revealed notable characteristics about predicting the practice of distancing during the COVID-19 pandemic. For instance, Millennials were found to practice COVID-19 distancing 32.1% less closely than Generation Z. This observation aligns with common news reports of Millennials going out to restaurants and bars instead of practicing distancing (Stieg, 2020). A study found that an age cohort's practice of distancing is associated

with their perceived risk of contracting COVID-19 (Masters et al., 2020). Therefore, if there are reports of Millennials going out often, this may be since they perceive less risk from COVID-19 and consequently, are less likely to practice distancing. Future studies should further investigate the impact of perceived risk on distancing amongst different age cohorts.

It is also interesting to note that women are 85% more likely to practice COVID-19 distancing more closely than men. This may be due to gender differences in response to COVID-19. In countries led by women, such as Germany and New Zealand, the response to the pandemic has been generally more effective than in countries led by men, such as the USA (Galasso et al., 2020). Thus, it is known that gender differences exist in approaching the pandemic practices so this gender difference may also explain why women are more likely than men to follow COVID-19 distancing more closely.

East Asian and Middle Eastern populations are 47% more likely to closely practice distancing than White folk. However, the reasoning is unclear since there is conflicting literature regarding this specific observation. Nevertheless, a study has found that possibly due to discrimination in the healthcare system, people of color are more hesitant to receive the COVID-19 vaccine than White people (Aw et al., 2021). It may be possible that non-White groups, such as East Asian and Middle Eastern populations, are more likely to practice distancing to avoid interaction with the healthcare system. Although distancing does not replace vaccination, it is an effective method of prevention that addresses hesitancy towards vaccination and interacting with the healthcare system.

It is also unclear why those in the income group between \$30,000-\$59,999 are 66.6% less likely to follow COVID-19 distancing more closely than those in the income group less than

\$30,000. Literature regarding income is unclear and thus, future studies should investigate more factors associated with income that predict the practice of safe COVID-19 behaviors.

In the bivariable models, it was interesting to observe that for those who used meth, cocaine, hallucinogens, or heroin at least once a week had *less* odds of closely practicing distancing than those who used less than once a month. Cannabis was the only drug that showed *more* odds of closely practicing distancing when used at least once a week as opposed to less than once a month.

Consulting the multivariable model with multiple confounders revealed an even larger effect measure for the use of hallucinogens. Those who used hallucinogens at least once a month were 655% more likely to practice distancing than those who used hallucinogens less than once a month with statistical significance. This model included controlling for the confounders: age cohorts, income groups, gender, self-rated physical health, self-rated mental health, use of methamphetamine, use of cocaine, and use of cannabis. Since it has been noted that Canadians use substances as a method of coping with the worries of the pandemic, while controlling for some confounding variables, it is possible that the use of certain recreational drugs such as hallucinogens increases the ability of some to cope and allows them to practice distancing. However, explanation for the high percentage remains unclear and thus, future studies should further investigate other confounders that may better distinguish the behaviours of Canadians that use hallucinogens, as opposed to other drugs.

In contrast, those who used cocaine at least once a week were found with statistical significance to be 90.4% less likely to closely practice distancing than those who used cocaine less than once a month. In contrast to the use of hallucinogens, it is possible that the use of certain recreational drugs, such as cocaine, decreases the odds of practicing distancing while

controlling for confounders. This may be because the use of harmful, recreational drugs, such as cocaine, decrease one's perception of risk and so they may be less likely to practice other safe behaviors such as distancing.

Although the model fit was not ideal (McFadden <0.2), it is useful in identifying what confounders variables lead to an unideal fit; future studies may include other confounding variables in the multivariable model to create ideal models with statistically significant effect measures. The interaction model was useful in highlighting potential relationships, such as how cocaine use has different effects on the practice of distancing depending on different age cohorts. Future studies may wish to further explore the relationship between more confounding variables in the multivariable model to create a model of more ideal fit.

Conclusion

In conclusion, the findings of this study call for interventions that create clearer and stronger associations between decreased recreational drug use and increased practice of distancing. Such interventions are needed to target unvaccinated Canadian adults, especially those turning to recreational drug use to cope with the worries of the COVID-19 pandemic. For instance, interventions should incorporate the interaction observed between the use of cocaine and age cohorts in order to address the practice of safe distancing. Given this study's advocacy for filling in knowledge gaps related to recreational drug use and practice of distancing, future studies should begin by looking at other confounders which have not yet been considered.

Acknowledgements

I would like to acknowledge the study participants, Dr. Kiffer Card, the School of Public Health and Social Policy at the University of Victoria, The Social Bubble Project team for

administering and creating the CSCS data, and The GenWell Project for contributing to the CSCS.

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Tables

Table #1: Description of Study: Sample Characteristics (N=208)

Variable	N/median	% / Q1-Q3 /sd
Age (years)	35.0	28.0-50.0 / 14.7
Age cohorts		
<i>Generation Z (19-24)</i>	30	14.4%
<i>Millennials (25-40)</i>	103	49.5%
<i>Generation X (41-56)</i>	40	19.2%
<i>Baby Boomers (57-75)</i>	33	15.9%
<i>Silent Generation (76+)</i>	2	0.96%
Gender		

<i>Man</i>	85	40.9%
<i>Woman</i>	114	54.8%
<i>Non-binary</i>	9	4.3%
Ethnicity Group		
<i>White</i>	153	73.6%
<i>African, Caribbean, or Black</i>	11	5.6%
<i>East Asian</i>	6	2.9%
<i>Middle Eastern</i>	6	2.9%
<i>South Asian</i>	4	1.9%
<i>Southeast Asian</i>	2	0.96%
<i>Indigenous</i>	10	4.8%
<i>Other</i>	16	7.7%
Income Group		
<i>Less than \$30,000</i>	54	26.0%
<i>\$30,000 to \$59,999</i>	49	23.6%
<i>\$60,000 to \$89,999</i>	57	27.4%
<i>\$90,000 or more</i>	49	23.1%
Self-rated Mental Health		
<i>Poor</i>	29	13.9%
<i>Fair</i>	39	18.8%
<i>Good</i>	65	31.3%
<i>Very Good</i>	51	24.5%

<i>Excellent</i>	24	11.5%
Self-rated Physical Health		
<i>Poor</i>	15	7.2%
<i>Fair</i>	36	17.3%
<i>Good</i>	68	32.7%
<i>Very Good</i>	60	28.8%
<i>Excellent</i>	29	13.9%
Use of cannabis		
<i>At least once a week</i>	45	21.6%
<i>At least once a month</i>	32	15.4%
<i>Less than once a month</i>	131	63.0%
Use of cocaine		
<i>At least once a week</i>	14	6.7%
<i>At least once a month</i>	23	11.1%
<i>Less than once a month</i>	171	82.2%
Use of hallucinogens		
<i>At least once a week</i>	10	4.8%
<i>At least once a month</i>	24	11.5%
<i>Less than once a month</i>	174	83.7%
Use of heroin		
<i>At least once a week</i>	9	4.3%
<i>At least once a month</i>	19	9.1%

<i>Less than once a month</i>	180	86.5%
Use of meth		
<i>At least once a week</i>	9	4.3%
<i>At least once a month</i>	25	12.1%
<i>Less than once a month</i>	174	83.6%
Covid distancing		
<i>Not at all</i>	24	11.5%
<i>Somewhat</i>	94	45.2%
<i>Very Closely</i>	90	43.3%

Italics indicate level.

Table #2: Descriptive statistics for study variables, stratified by levels of covid_distancing

(N=208)

Variable	Level 1 = Not at all n= 24	Level 2 = Somewhat n= 94	Level 3 = Very closely n= 90	P-value for bivariate Association
	N (%)	N (%)	N (%)	
Age cohorts				0.0002069
<i>Generation Z (19-24)</i>	1(3.3)	12(40.0)	17(56.7)	
<i>Millennials (25-40)</i>	4(3.9)	52(50.5)	47(45.6)	
<i>Generation X (41-56)</i>	9(22.5)	13(32.5)	18(45.0)	
<i>Baby Boomers (57-75)</i>	10(30.3)	15(45.5)	8(24.2)	

<i>Silent Generation (76+)</i>	0(0)	2(100)	0(0)	
Gender				0.002496
<i>Man</i>	11(12.9)	45(52.9)	29(34.1)	
<i>Woman</i>	9(7.9)	48(42.1)	57(50.0)	
<i>Non-binary</i>	4(44.4)	1(11.1)	4(44.4)	
Ethnicity Group				0.4058
<i>White</i>	17(11.1)	68(44.4)	68(44.4)	
<i>African, Caribbean, or Black</i>	1(9.1)	5(45.5)	5(45.5)	
<i>East Asian</i>	0(0)	3(50.0)	3(50.0)	
<i>Middle Eastern</i>	0(0)	3(50.0)	3(50.0)	
<i>South Asian</i>	2(50.0)	0(0)	2(50.0)	
<i>Southeast Asian</i>	1(50.0)	0(0)	1(50.0)	
<i>Indigenous</i>	1(10.0)	5(50.0)	4(40.0)	
<i>Other</i>	2(12.5)	10(62.5)	4(25.0)	
Income Group				0.04807
<i>Less than \$30,000</i>	4(7.4)	20(37.0)	30(55.6)	
<i>\$30,000 to \$59,999</i>	4(81.6)	30(61.2)	15(30.6)	
<i>\$60,000 to \$89,999</i>	8(14.0)	28(49.1)	21(36.8)	
<i>\$90,000 or more</i>	8(16.7)	16(33.3)	24(50.0)	
Self-rated Mental Health				0.1437
<i>Poor</i>	1(3.4)	11(37.9)	17(58.6)	

<i>Fair</i>	2(5.13)	17(43.6)	20(51.3)	
<i>Good</i>	10(15.4)	32(49.2)	23(35.4)	
<i>Very Good</i>	5(9.8)	25(49.0)	21(41.1)	
<i>Excellent</i>	6(25.0)	9(37.5)	9(37.5)	
Self-rated Physical Health				3.366e-06
<i>Poor</i>	0(0)	6(40.0)	9 (60.0)	
<i>Fair</i>	4(11.1)	15(41.7)	17(47.2)	
<i>Good</i>	5(17.4)	36(52.9)	27(39.7)	
<i>Very Good</i>	6(10.0)	30(50.0)	23(40.0)	
<i>Excellent</i>	9(31.0)	7(24.1)	13(44.8)	
Use of cannabis				0.5147
<i>At least once a week</i>	6(13.3)	16(35.6)	23(51.1)	
<i>At least once a month</i>	2(6.3)	15(46.9)	15(46.9)	
<i>Less than once a month</i>	16(12.2)	63(48.1)	52(39.7)	
Use of cocaine				0.6902
<i>At least once a week</i>	1(7.1)	9(64.3)	4(28.6)	
<i>At least once a month</i>	3(13.0)	10(43.5)	10(43.5)	
<i>Less than once a month</i>	20(11.7)	75(43.9)	76(44.4)	
Use of hallucinogens				0.8409
<i>At least once a week</i>	1(10.0)	5(50.0)	4(40.0)	
<i>At least once a month</i>	2(8.3)	9(37.5)	13(54.2)	
<i>Less than once a month</i>	21(12.1)	80(46.0)	73(41.9)	

Use of heroin				0.4494
<i>At least once a week</i>	2(22.2)	4(44.4)	3(33.3)	
<i>At least once a month</i>	0(0)	10(52.6)	9(47.4)	
<i>Less than once a month</i>	22(12.2)	80(44.4)	78(43.3)	
Use of meth				0.8814
<i>At least once a week</i>	1(11.1)	5(55.6)	3(33.3)	
<i>At least once a month</i>	2(8.0)	13(52.0)	10(40.0)	
<i>Less than once a month</i>	21(12.1)	76(43.7)	77(44.3)	

Italics indicate level.

Table #3: Odds Ratios of Bivariable and Multivariable Logistic Regression Models

Variable	Bivariable Odds Ratio (with 95% confidence interval)	Multivariable Odds Ratio (with 95% confidence interval)
Age cohorts		
<i>Generation Z (19-24)</i>	Ref	Ref
<i>Millennials (25-40)</i>	0.679 (0.302 – 1.48)	0.635 (0.242 – 1.61)
<i>Generation X (41-56)</i>	0.444 (0.170 – 1.13)	0.310 (0.0938 – 0.982)
<i>Baby Boomers (57-75)</i>	0.178* (0.0642 – 0.476)	0.12* (0.0366 – 0.379)
<i>Silent Generation (76+)</i>	0.214 (0.0172 – 2.61)	0.245 (0.0140 – 4.29)
Gender		
<i>Man</i>	Ref	Ref

<i>Woman</i>	1.85* (1.08 – 3.18)	1.74 (0.938 -3.23)
<i>Non-binary</i>	0.559 (0.120 – 2.58)	0.901 (0.119 – 6.09)
Ethnicity Group		
<i>White</i>	Ref	Ref
<i>African, Caribbean, or Black</i>	1.08 (0.336 – 3.58)	0.630 (0.163 – 2.47)
<i>East Asian</i>	1.47 (0.322 – 7.70)	0.770 (0.145 – 4.80)
<i>Middle Eastern</i>	1.47 (0.322 – 7.70)	2.84 (0.379 – 25.2)
<i>South Asian</i>	0.391 (0.0352 – 4.31)	0.342 (0.0194 – 5.53)
<i>Southeast Asian</i>	0.391 (0.0112 – 13.5)	3.35 (0.0496 – 220)
<i>Indigenous</i>	0.888 (0.264 – 3.05)	1.25 (0.326 0 4.98)
<i>Other</i>	0.540 (0.206 – 1.40)	0.587 (0.204 – 1.68)
Income Group		
<i>Less than \$30,000</i>	Ref	Ref
<i>\$30,000 to \$59,999</i>	0.444* (0.210 – 0.924)	0.535 (0.219 – 1.29)
<i>\$60,000 to \$89,999</i>	0.469* (0.225 – 0.963)	0.587 (0.246 – 1.39)
<i>\$90,000 or more</i>	0.686 (0.316 – 1.48)	0.684 (0.277 – 1.68)
Self-rated Mental Health		
<i>Poor</i>	Ref	Ref
<i>Fair</i>	0.750 (0.289 – 1.91)	0.778 (0.242 – 2.46)
<i>Good</i>	0.363* (0.150 – 0.847)	0.392 (0.126 – 1.17)
<i>Very Good</i>	0.493 (0.198 – 1.19)	0.679 (0.193 – 2.34)
<i>Excellent</i>	0.303* (0.101 – 0.887)	0.486 (0.106 – 2.19)

Self-rated Physical Health		
<i>Poor</i>	Ref	Ref
<i>Fair</i>	0.529 (0.154 – 1.69)	0.675 (0.167 – 2.55)
<i>Good</i>	0.448 (0.141 – 1.30)	1.00 (0.251 – 3.78)
<i>Very Good</i>	0.429 (0.133 – 1.26)	0.681 (0.155 – 2.81)
<i>Excellent</i>	0.300 (0.0811 – 1.04)	0.468 (0.0877 – 2.38)
Use of cannabis		
<i>At least once a week</i>	1.43 (0.739 – 2.79)	1.71 (0.746 – 4.01)
<i>At least once a month</i>	1.42 (0.683 – 2.98)	2.12 (0.680 – 6.99)
<i>Less than once a month</i>	Ref	Ref
Use of cocaine		
<i>At least once a week</i>	0.683 (0.251 – 1.85)	0.0955* (0.0114 – 0.746)
<i>At least once a month</i>	0.942 (0.408 – 2.19)	0.196 (0.0327 – 1.08)
<i>Less than once a month</i>	Ref	Ref
Use of hallucinogens		
<i>At least once a week</i>	0.982 (0.294 – 3.35)	4.26 (0.526 – 41.2)
<i>At least once a month</i>	1.62 (0.710 – 3.82)	7.55* (1.31 – 53.8)
<i>Less than once a month</i>	Ref	Ref
Use of heroin		Not included in the model
<i>At least once a week</i>	0.575 (0.154 – 2.14)	
<i>At least once a month</i>	1.43 (0.597 – 3.53)	
<i>Less than once a month</i>	Ref	

Use of meth		
<i>At least once a week</i>	0.728 (0.207 – 2.58)	0.343 (0.300 – 3.63)
<i>At least once a month</i>	0.950 (0.433 – 2.10)	0.634 (0.119 – 3.12)
<i>Less than once a month</i>	Ref	Ref
*Statistical significance noted through 95% confidence intervals		



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