

Assessing the prevalence and correlates of prenatal cannabis consumption in an urban Canadian population: a cross-sectional survey

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Abstract

Background: Recreational cannabis use was legalized in Canada in October 2018. We aimed to determine the prevalence and correlates of cannabis consumption among pregnant individuals in a single Canadian city following national legalization.

Methods: Over the period May to October 2019, we distributed an anonymous cross-sectional survey to pregnant patients attending family practice, midwifery, and low-risk and high-risk obstetrics clinics in Hamilton, Ontario. Eligibility was based on English literacy and current pregnancy. The survey included questions regarding lifetime and in-pregnancy cannabis use, intent for postpartum use and patterns of use. We also collected demographic information. We calculated descriptive statistics and performed logistic regression analyses to explore the relations between cannabis consumption and demographic characteristics.

Results: Of 531 pregnant individuals approached, 478 agreed and were able to participate, for a 90% participation rate. Among these 478 respondents, 54 (11%) reported consuming cannabis at some point during the pregnancy and 20 (4%) reported currently consuming cannabis. Among the 460 respondents who intended to breastfeed, 23 (5%) planned to consume cannabis during the postpartum period. Of 20 current users, 13 (65%) reported consuming cannabis at least weekly and 19 (95%) reported nausea, sleep problems or anxiety as reasons for use. Respondents without postsecondary education had 10.0-fold (95% confidence interval [CI] 4.6–23.5) greater odds of prenatal cannabis consumption than university-educated respondents. In addition, respondents who reported that their partners used cannabis had 3.9-fold (95% CI 2.2–7.3) greater odds of prenatal cannabis consumption than those who reported that their partners did not use cannabis.

Interpretation: Lower educational attainment and partners' cannabis consumption were associated with greater odds of in-pregnancy cannabis use. These results may help to inform early intervention strategies to decrease cannabis consumption during this vulnerable period of fetal and neonatal development.

The *Cannabis Act*, passed in October 2018, legalized recreational cannabis consumption in Canada.¹ Following legalization, the prevalence of cannabis use among women during the previous 3 months rose from 11.1% in 2018 to 14.0% in 2019.^{2,3} Furthermore, several studies have reported that the prevalence of prenatal cannabis use is increasing over time.^{4,5} For example, an Ontario-based study showed that 1.2% of pregnant women reported cannabis consumption in 2012 compared with 1.8% in 2017.⁶ The prevalence of prenatal cannabis consumption following legalization in Canada is not yet understood. In addition, recent prevalence data on prenatal cannabis consumption have been based on self-reporting to health care providers,^{7,8} an approach that is prone to under-reporting.

The literature concerning newborn health outcomes associated with prenatal cannabis consumption is heterogeneous.⁹ Several studies found that prenatal cannabis consumption was associated with low birth weight, preterm

delivery, placental abruption and admission to neonatal intensive care,^{6,10–13} whereas other studies found no association with preterm delivery, stillbirth or neonatal mortality.^{14,15} Despite this uncertainty, organizations of health care providers advise against the use of cannabis in pregnancy and while breastfeeding.^{16,17}

We aimed to estimate the prevalence of in-pregnancy cannabis consumption, to identify the demographic correlates of prenatal consumption and to characterize patterns of consumption.

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Methods

Design and setting

We conducted a cross-sectional survey of individuals attending 5 of the 7 prenatal clinics in Hamilton, Ontario: 3 obstetrics clinics (2 Fontbonne Obstetrics and Gynecology clinic, St. Joseph's Healthcare, run by obstetricians; the Maternal Fetal Medicine Clinic at McMaster University Medical Centre, a clinic for high-risk patients, run by maternal–fetal medicine specialists; and the McMaster University–affiliated obstetric clinic, run by obstetricians), 1 family practice clinic (the Maternity Centre of Hamilton) and 1 midwifery clinic (Mountain Midwifery Care). Some of the obstetrics clinics participating in the study have several locations. The 4 physician-run clinics were affiliated with McMaster University and were representative of individuals seeking physician-directed care in the city. The 3 clinics run by obstetricians serve both high- and low-risk patients, whereas the family practice and midwifery clinics serve low-risk patients.

Inclusion of the single midwifery clinic was based on an established working relationship with A.K.S. in the labour and delivery unit; this clinic had previously expressed interest in participating in research. We did not approach the other 2 midwifery clinics in Hamilton, because there was no pre-existing working relationship. Additionally, the 5 clinics included in the study were thought to represent a variety of care models and diverse patient populations.

Participants

Pregnant individuals were approached only when researchers were available to attend the 5 prenatal clinics (May to October 2019). In general, researchers attended each clinic at least monthly (i.e., about 1 clinic per week) for about 4 hours throughout the 5-month study period, with additional attendance when possible. Our study did not include all pregnant individuals attending prenatal care during the study period, but rather a convenience sample of those who attended prenatal care while researchers were present at the clinics. Each prenatal clinic that participated in the study saw 15 to 25 patients per half-day, which provided an adequate population from which to draw our sample.

At each participating clinic, during the dates and times of data collection, we asked administrative staff to approach all patients upon their arrival. Staff asked whether the patient was agreeable to having a researcher approach them to discuss study participation. If they agreed, the researcher explained the purpose and anonymity of the study. Participants were required to indicate that they understood and consented to participation. The surveys were completed in private. The inclusion criteria were current pregnancy and English literacy (because the survey was written in English).

Data source

Two of the authors (A.K.S., S.S.) developed a 15-item anonymous survey, with questions pertaining to lifetime and in-pregnancy cannabis consumption, as well as demographic data. All questions were multiple-choice except for age, which

was a free-text field. Participants who answered “yes” to current consumption in pregnancy were presented with 4 additional questions to assess intent, frequency and methods of consumption. The other coauthors reviewed and internally piloted the survey to ensure that it was simple to use and could be completed within 5 minutes.

We administered the survey through the REDCap web application, and participants responded to the survey using electronic tablets.

Statistical analysis

Before data collection began, we calculated a required sample size of at least 296 participants. This calculation was based on a 2017 survey-based study reporting that 34% of women consumed cannabis at the time of pregnancy diagnosis and 26% of those who consumed cannabis during pregnancy believed that such consumption could harm the fetus.¹⁸ With a possible population proportion of 26%, we determined that a sample size of 296 participants would provide a 95% confidence level with a 5% margin of error.

We used descriptive statistics to summarize the population characteristics and calculated 95% confidence intervals (CIs) for each population estimate. We separated highest educational attainment into 3 categories: elementary or high school, college or trade school, and university or graduate school. Annual household income (in Canadian dollars) was stratified into 3 categories: less than \$40 000, \$40 000 to \$100 000, and greater than \$100 000. The income categories were based on tax bracket quintiles in Ontario, with pooling of the 2 upper and the 2 lower quintiles because of small sample sizes.

We performed all analyses with R software (R Foundation for Statistical Computing). We used logistic regression analysis to evaluate possible relations between demographic variables and variables relating to participants' cannabis consumption. We calculated unadjusted odds ratios (ORs) by setting each demographic variable as the independent variable in the following 3 models: cannabis consumption at some point in pregnancy, current consumption and intent to consume while breastfeeding. We used Wald tests to determine the significance of each OR at the level of p less than 0.05, and we calculated the 95% CI for each estimate.

The numbers of individuals who responded “yes” to cannabis consumption at some point in pregnancy, current consumption and intent to consume while breastfeeding guided our statistical analyses. Each logistic regression required at least 10 positive cannabis consumption responses for each parameter included in the model (i.e., at least 10 events per variable).¹⁹ The number of positive responses to each parameter (cannabis consumption at some point in pregnancy, current consumption, intent to consume while breastfeeding) allowed us to estimate a maximum of 5, 2 and 2 parameters, respectively, in each model. For this reason, we performed multivariable regression only for cannabis consumption at some point during pregnancy, with independent variables of education, relationship status and partner's cannabis consumption. For this analysis, we excluded income because of limited events per variable. Educational attainment was

correlated with income (Spearman $\rho = 0.42$; $p < 0.001$) and was used to indicate socioeconomic status. Additionally, age was excluded from the multivariable regression because of missing data, which limited sample size to a value below the acceptable events per variable.

Ethics approval

The study protocol (no. 7131) was reviewed and approved by the Hamilton Integrated Research Ethics Board on May 6, 2019.

Results

Of the 531 individuals approached to participate at the 5 clinics included in our study, 478 (90%) agreed (Figure 1). The final study sample represented individuals from a range of demographic backgrounds in terms of education, household income, relationship status and age (Table 1).

Just under half of participants ($n = 218/478$ [46%]) reported university or graduate school education, and 176 (37%) reported household income over \$100 000. Most ($n = 437/477$, 92%) were married or living with a partner. The median age of the sample was 32.3 years (range 19–41 yr).

The prevalence of cannabis consumption at some point during pregnancy, including before the person knew about the pregnancy, was 11% (95% CI 8–14; $n = 54/478$). A total of 4% (95% CI 2–6; $n = 20/478$) of participants reported currently consuming cannabis. Among the 460 participants (96% of the total sample) who were planning to breastfeed, 5% (95% CI 3–7; $n = 23/460$) intended to consume cannabis during that time. Of the 20 individuals who reported current cannabis consumption, 9 planned to consume cannabis while

breastfeeding, 8 did not plan to consume while breastfeeding, and 3 did not intend to breastfeed. Cannabis consumption by the participant’s partner was reported by 37% (95% CI 33–42; $n = 178/476$) of respondents. Within this subset, 23% (95% CI 17–30; $n = 40/177$) of participants reported that their partner had smoked cannabis around them during the pregnancy.

Among the 20 participants who reported current cannabis consumption, 13 (65%) consumed cannabis at least weekly. The most common reasons for consumption were nausea or vomiting, difficulty sleeping, and nerves or anxiety, with 1 or more of these being reported by 19 (95%) of the 20 current users.

Correlates of cannabis consumption

In the univariable models, low socioeconomic status was associated with greater odds of prenatal cannabis consumption and intent to consume while breastfeeding. Compared with individuals who had university or graduate school education, those with an elementary or high school education exhibited 10.0-fold (95% CI 4.6–23.5) greater odds of cannabis consumption at some point in pregnancy, 19.9-fold (95% CI 5.4–128.6) greater odds of current consumption and 7.0-fold (95% CI 2.5–22.7) greater odds of intent to consume while breastfeeding (Table 2). Likewise, compared with individuals whose annual household income was greater than \$100 000, those with an income less than \$40 000 exhibited 4.2-fold (95% CI 2.1–8.7) greater odds of cannabis consumption at some point in pregnancy and 15.2-fold (95% CI 4.1–98.4) greater odds of current consumption (Table 2). In general, midrange socioeconomic status (i.e., college or trade school education, annual household income between \$40 000 and \$100 000, or both) was not associated with greater odds of cannabis consumption during pregnancy or intent to consume while breastfeeding, relative to high socioeconomic status (i.e., university or graduate school education, annual income greater than \$100 000, or both).

Social factors were associated with increased odds of cannabis consumption at some point in pregnancy and intent to consume while breastfeeding. Compared with participants whose partners did not consume cannabis, those who reported cannabis consumption by their partner exhibited 3.9-fold (95% CI 2.2–7.3) greater odds of cannabis consumption at some point in pregnancy, 3.3-fold (95% CI 1.3–8.9) greater odds of current consumption and 3.4-fold (95% CI 1.4–8.7) greater odds of intent to consume while breastfeeding. Furthermore, compared with participants who were married or living with a partner, those who were single or dating exhibited 3.6-fold (95% CI 1.6–7.5) greater odds of cannabis consumption at some point in pregnancy and 4.0-fold (95% CI 1.2–11.1) greater odds of current consumption. Age was not associated with cannabis consumption or intent to use (Table 2).

In the multivariable model, participants with elementary or high school education exhibited 7.5-fold (95% CI 3.3–18.3) greater odds of cannabis consumption at some point during pregnancy relative to participants with university or graduate school education. Furthermore, participants who reported

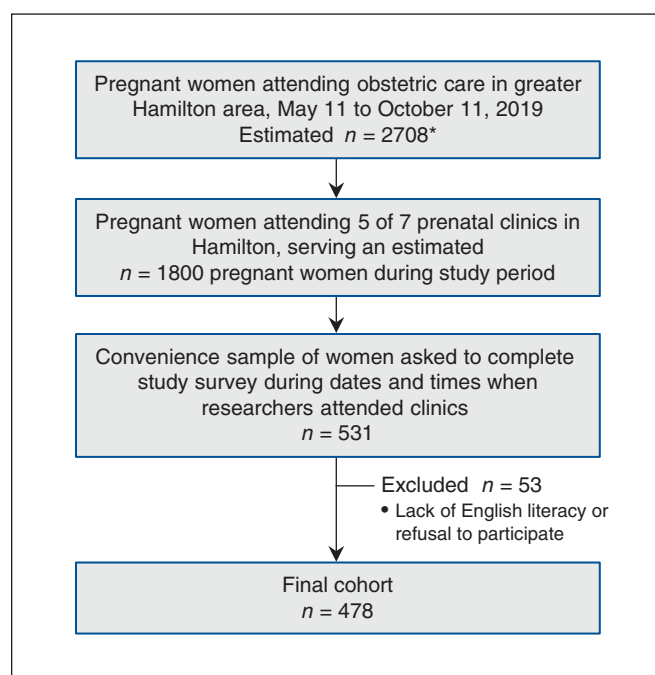


Figure 1: Selection of participants for survey. *The estimated 2708 pregnant individuals attending care accounted for 5/12 of the approximately 6500 annual deliveries in Hamilton.

Table 1: Sociodemographic characteristics of participants by use of or intent to use cannabis

Characteristic	Reported consumption; no. (%) of participants*†					
	Cannabis consumption at some point in pregnancy		Current cannabis consumption during pregnancy		Intent to consume cannabis while breastfeeding‡	
	No n = 424	Yes n = 54	No n = 458	Yes n = 20	No n = 437	Yes n = 23
Education, highest attainment						
Elementary or high school	63 (70)	27 (30)	76 (84)	14 (16)	71 (86)	12 (14)
College or trade school	152 (89)	18 (11)	166 (98)	4 (2)	158 (96)	6 (4)
University or graduate school	209 (96)	9 (4)	216 (99)	2 (1)	208 (98)	5 (2)
Income, \$						
< 40 000	69 (73)	25 (27)	80 (85)	14 (15)	80 (91)	8 (9)
40 000–100 000	193 (93)	15 (7)	204 (98)	4 (2)	191 (96)	7 (4)
> 100 000	162 (92)	14 (8)	174 (99)	2 (1)	166 (95)	8 (5)
Partner cannabis consumption§						
Yes	142 (80)	36 (20)	165 (93)	13 (7)	154 (91)	15 (9)
No	280 (94)	18 (6)	291 (98)	7 (2)	281 (97)	8 (3)
Relationship status¶						
Single or dating	29 (72)	11 (28)	35 (88)	5 (12)	31 (91)	3 (9)
Married or living together	395 (90)	42 (10)	422 (97)	15 (3)	405 (95)	20 (5)
Age, yr, mean ± SD**	32.6 ± 4.4	30.4 ± 6.0	32.4 ± 4.7	31.1 ± 4.2	32.4 ± 4.5	30.5 ± 5.3

Note: SD = standard deviation.
 *Except where indicated otherwise.
 †For each category of consumption or intent to consume, the percentages represent proportions in each row who did and did not report consumption or intent to consume.
 ‡Based on the subset of participants who responded to the question about intention to breastfeed (n = 460).
 §Two observations removed due to missingness.
 ¶One observation removed due to missingness.
 **Based on the subset of participants who reported their age (n = 191).

cannabis consumption by their partner exhibited 3.2-fold (95% CI 1.7–6.1) greater odds of cannabis consumption at some point in pregnancy, relative to those who reported that their partner did not consume cannabis. However, in this analysis, single or dating status was no longer significantly associated with greater odds of cannabis consumption at some point during pregnancy relative to those who were married or living with a partner (Table 2). The association of cannabis consumption at some point in pregnancy with education level and partner cannabis consumption is displayed in Figure 2.

Interpretation

In our survey study, we found that 11% of participants had consumed cannabis at some point in pregnancy, and 4% were currently consuming cannabis. This prevalence is higher than previously reported in Canada among pregnant women. For example, a 2017 study reported a 1.8% rate of prenatal cannabis use in Ontario.⁶ Our prevalence estimate is likely higher because we conducted our survey after legalization, and we employed an anonymous survey rather than relying on self-reporting to health care providers or administrative databases, thereby encouraging honest reporting.

Our prevalence estimate is also higher than previous estimates from the United States, where cannabis is not federally legalized.^{4,5,20,21} Some US studies have examined prenatal consumption in individual states where cannabis has been legalized. A Colorado-based study reported 5.7% prenatal cannabis consumption at any time during pregnancy over the period 2014 to 2015,²⁰ and a California-based study reported 3.38% prenatal consumption in 2017.²² Although these rates are lower than our estimate of prenatal consumption, responses in those studies were not anonymous, which might have reduced honest reporting.

Our study sample was broadly representative of urban Canadian women and similar to urban pregnant participants in other Canadian studies. The 2016 Canadian census showed that 74.3% of women aged 25 to 34 had completed university, college or an apprenticeship program,²³ similar to the 81% of participants in our sample. Our sample was also similar in education and income levels to the All Our Babies pregnancy cohort from Calgary²⁴ (Appendix 1, Figures S1 and S2, available at www.cmajopen.ca/content/9/2/E703/suppl/DC1). Regarding household income, Hamilton is similar to other urban communities. The median annual household income in Hamilton is \$75 464, compared with \$78 373 in Toronto and

Table 2: Logistic regression analysis for the association of use of or intent to use cannabis with participants' sociodemographic characteristics

Characteristic	Reported consumption; odds ratio (95% CI) for outcome			
	Cannabis consumption at some point during pregnancy		Current cannabis consumption during pregnancy, unadjusted	Intent to consume cannabis while breastfeeding, unadjusted
	Adjusted*	Unadjusted		
Education, highest attainment				
Elementary or high school	7.5 (3.3–18.3)	10.0 (4.6–23.5)	19.9 (5.4–128.6)	7.0 (2.5–22.7)
College or trade school	2.3 (1.0–5.6)	2.7 (1.2–6.6)	2.6 (0.5–18.9)	1.6 (0.5–5.6)
University or graduate school	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)
Income, \$				
< 40 000	NA	4.2 (2.1–8.7)	15.2 (4.1–98.4)	2.1 (0.7–5.8)
40 000–100 000	NA	0.9 (0.4–1.9)	1.7 (0.3–12.4)	0.8 (0.3–2.2)
> 100 000	NA	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)
Partner cannabis consumption				
Yes	3.2 (1.7–6.1)	3.9 (2.2–7.3)	3.3 (1.3–8.9)	3.4 (1.4–8.7)
No	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)
Relationship status				
Single or dating	1.8 (0.8–4.3)	3.6 (1.6–7.5)	4.0 (1.2–11.1)	1.2 (0.4–6.1)
Married or living together	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)
Age, per yr	NA	0.9 (0.8–1.0)	0.9 (0.8–1.1)	0.9 (0.8–1.1)

Note: CI = confidence interval, NA = not applicable, Ref. = reference category.
 *Variables labelled NA were excluded from the multiple regression model used to calculate adjusted odds ratios; all other variables were included.

\$70 336 in Canada generally.²⁵ In our sample, 37% of participants reported that their partners consumed cannabis, which is similar to Canadian population estimates for this age group. For example, in the third quarter of 2019 (during our data collection period), 29.8% of those aged 25 to 34 years had consumed cannabis in the previous 3 months.²⁶ Thus, if we assume that partners were similar in age to study participants (median age 32.3 yr), our finding of 37% partner use seems representative of the Canadian population. Regarding relationship status, 92% of participants in our study were married or living with a partner, similar to the 97.2% married or living with a partner in the Ontario Birth Study²⁷ and 94.4% married or living common law in the All Our Babies cohort.²⁴ Finally, the age distribution of pregnant individuals in our study was similar to that of pregnant Ontarians in fiscal year 2016/17 (Appendix 1, Figure S3).²⁸

In our study, low socioeconomic status was associated with increased odds of cannabis consumption during pregnancy and intent to consume cannabis while breastfeeding. For example, participants who completed only high school or elementary school exhibited 10.0-fold greater odds of consuming cannabis at some point in pregnancy than university-educated participants. The association between lower educational attainment and prenatal cannabis use is consistent with previous findings.^{4,6,20,21} In general, we did not find an association between college or trade school education

and cannabis consumption outcomes. This suggests that surveys combining college and high school education into a single category may not accurately represent cannabis consumption in these groups. Overall, we found that only the lowest socioeconomic status categories (i.e., high school or elementary education, income < \$40 000) were associated with greater odds of cannabis consumption.

Among those planning to breastfeed, 5% intended to consume cannabis during that time. The isolated effects of cannabis consumption during lactation on health outcomes for newborns are unclear, partly because exposure to tetrahydrocannabinol (THC) through breast milk is often confounded by in utero exposure. Although some studies have shown the presence of THC metabolites in breast milk,^{29–31} the clinical significance of this exposure remains undetermined. One study reported an association between THC exposure through breast milk and delayed motor development in infants.³² Despite the paucity of data, organizations of health care providers discourage cannabis consumption during lactation.^{16,17} We found that several current consumers who intended to breastfeed planned to consume cannabis during that time; therefore, health care providers should discuss the potential effects of lactational exposure with patients who consume cannabis prenatally.

Individuals whose partners consumed cannabis had greater odds of cannabis consumption outcomes. Several studies have

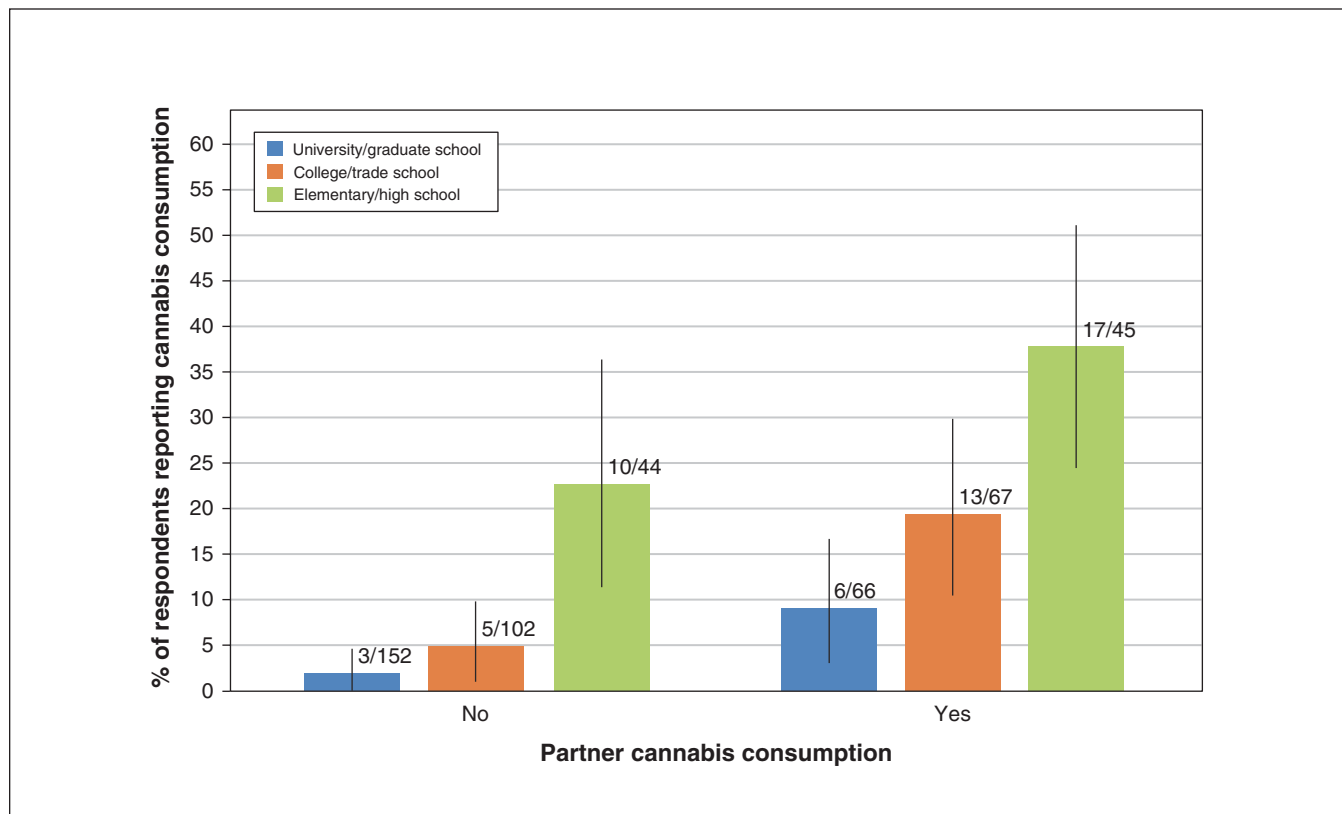


Figure 2: Proportion of survey respondents reporting cannabis consumption at some point in the pregnancy, across 3 levels of educational attainment, with and without partners who consume cannabis. For each group of respondents, the coloured bars represent the observed proportions who reported the outcome, and the vertical lines represent the 95% confidence intervals around each proportion.

shown that pregnant women are less likely to discontinue substance use if their partners also use.^{33–35} Furthermore, among the 37% of participants who reported cannabis consumption by their partner, 23% reported that their partner smoked cannabis around them. Recent studies have shown that nonsmokers who are exposed to secondhand cannabis smoke may have detectable THC concentrations in blood and urine samples.^{36,37} Taken together with the known fetal risks of maternal exposure to secondhand tobacco smoke,^{38,39} secondhand exposure to cannabis smoke may be cause for concern. There is minimal literature on the effects of partner interventions on maternal cannabis consumption. However, data support the efficacy of partner intervention in maternal cessation of tobacco smoking.^{40,41} Future research should consider the role of active partner engagement in reducing cannabis consumption during pregnancy.

The most common reasons for consumption reported in our study were nausea and vomiting, difficulty sleeping, and nerves or anxiety. Nausea has previously been reported as a common reason for cannabis consumption in pregnancy.²² The information gained in our study may help to destigmatize prenatal cannabis consumption and shows its role in pregnancy-related symptom management for many individuals who consume prenatally. With this knowledge, prenatal care providers may proactively offer alternatives to cannabis to alleviate pregnancy-related symptoms.

Pregnant individuals have reported an increased need for communication, resources and patient-centred care from their health care providers in relation to the fetal effects of cannabis consumption.^{42–44} Nonetheless, health care providers may defer discussion about cannabis consumption because of the heterogeneity of evidence relating to the effects of prenatal consumption. However, given the lack of long-term data on the health outcomes of prenatal cannabis consumption, a pre-emptive harm reduction approach should be taken. Our data provide information about prenatal cannabis consumption patterns to facilitate targeted counselling.

Understanding and identifying trends before and after legalization of cannabis, as we have done here, can inform public health education and clinical practice. Additionally, we attempted to address the problem of under-reporting by employing an anonymous self-reported survey. The information we collected about reasons for maternal cannabis consumption can help clinicians in offering safer alternatives to cannabis during pregnancy.

Limitations

Although our survey was internally tested by the authors before administration, it was not piloted by members of the study population and was not officially validated. Such feedback could have improved question formatting to ensure participant understanding and accuracy of responses. We excluded

potential participants who were nonfluent or nonliterate in English because the survey was written in English; this might have led to selection bias. Furthermore, the exact response rate could not be determined, because we did not prospectively record the number of patients at each clinic attended. Rather, our response rate is based on the number of pregnant patients approached by the research team.

We did not collect data identifying participants' current gestational age. Previous studies have shown that consumption tends to be highest in the first trimester.²¹ Our sample may have over- or under-represented certain gestational ages, which might have affected prevalence estimates. Our survey did not address whether finding out about the pregnancy influenced participants' decisions to continue consuming cannabis. This distinction could have provided insight into patients' health literacy regarding cannabis consumption in pregnancy. The survey also did not include questions about participants' ethnicity or use of other substances, factors that have previously been associated with prenatal cannabis consumption.^{4,6,20,21,45,46}

Self-report surveys of cannabis consumption in pregnancy are prone to under-reporting.^{7,8} Although our survey was anonymized to encourage honest disclosure, completion of the survey in a health care setting might have reduced participants' subjective perceptions of anonymity. Additionally, a high proportion of survey responses were missing the participant's age, which likely contributed to wide CIs and reduced our ability to draw conclusions with regard to age.

Our sample size calculation was based on data related to perceptions about cannabis consumption during pregnancy, not prenatal cannabis consumption, which would have been more appropriate. The low sample size in this study might have contributed to the large CIs surrounding the ORs. As such, our data can inform health care providers about the demographic characteristics with greater odds of prenatal cannabis consumption, but the magnitude of those odds is uncertain, given the CIs that we calculated.

Conclusion

The prevalence of prenatal cannabis consumption reported in this survey study was higher than rates obtained in pre-legalization studies from Canada. Prenatal cannabis consumption was associated with partners' cannabis consumption and lower socioeconomic status. Knowledge of the demographic characteristics associated with greater odds of consumption can help health care providers to screen for cannabis use among pregnant patients. Proactively offering evidence-based alternatives for coping with bothersome symptoms during pregnancy could help to reduce prenatal cannabis consumption.

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Data sharing: Other researchers may contact the corresponding author by email to obtain access to data from this survey. These data can be made available upon request without terms or conditions.

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