



# Changes of prevalence of cannabis use disorder in pregnant women in Quebec before and after the cannabis legislation



Congrès provincial de la recherche mère-enfant

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With the 2018 Cannabis Act (CA-2018), many concerns regarding the well-being of pregnant women emerged.

While public guidelines explicitly recommend avoiding cannabis consumption during pregnancy, especially after CA-2018, some pregnant women have reported using this drug to address **medical, psychological, and social issues.**

During the first half of the past decade, some Canadian provinces witnessed an increase in prenatal cannabis use (1,2)

A matter of public health concern given the associations between prenatal cannabis use and elevated risk of preterm birth, neonatal intensive care unit admissions, low birth weight, and decreased Apgar scores (3)



Based on the conceptual framework of the social determinants of healthy pregnancies (1), we focus on:

**structural determinants** (i.e., policies, including the dynamics of the healthcare system, and cultural values) and  
**intermediate determinants** (i.e., psychosocial factors and behaviors) interact.



This research project aims to better understand the evolution of cannabis consumption among pregnant women in Quebec, with a focus on **cannabis-related policies**.



## Objective: Evaluating the association of CA-2018 with the prevalence of diagnosed cannabis use disorder among pregnant women in Quebec.

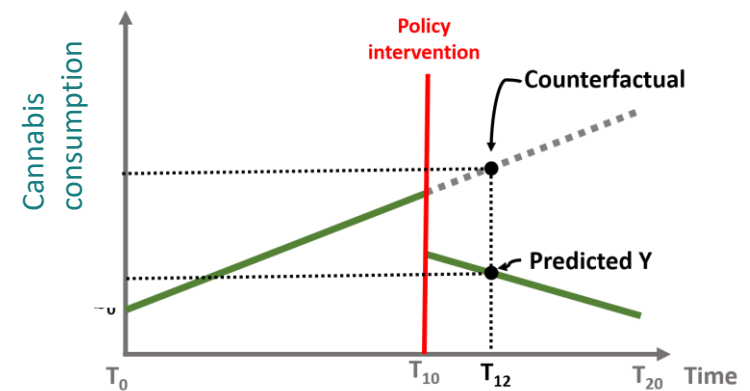
### Study design:

A population-based retrospective cohort study examining whether the prevalence of pregnant women diagnosed with **cannabis use disorder** differs before and after CA-2018.

We utilize adjusted means for this outcome by working with data from 17 administrative regions in Quebec. (Data came from the Québec Integrated Chronic Disease Surveillance System (QICDSS). The QICDSS provides access to annually updated and linked information from five administrative health databases since January 1, 1996)

We use data from January 2010 to April 2021

We study women aged 15 years and older who have given birth to a child with a gestational age of at least 20 weeks in a Quebec hospital.





## Methods:

Time series models were fitted to study the association between the monthly number of diagnoses of cannabis use disorder and the cannabis law.

Different estimation methods were used:

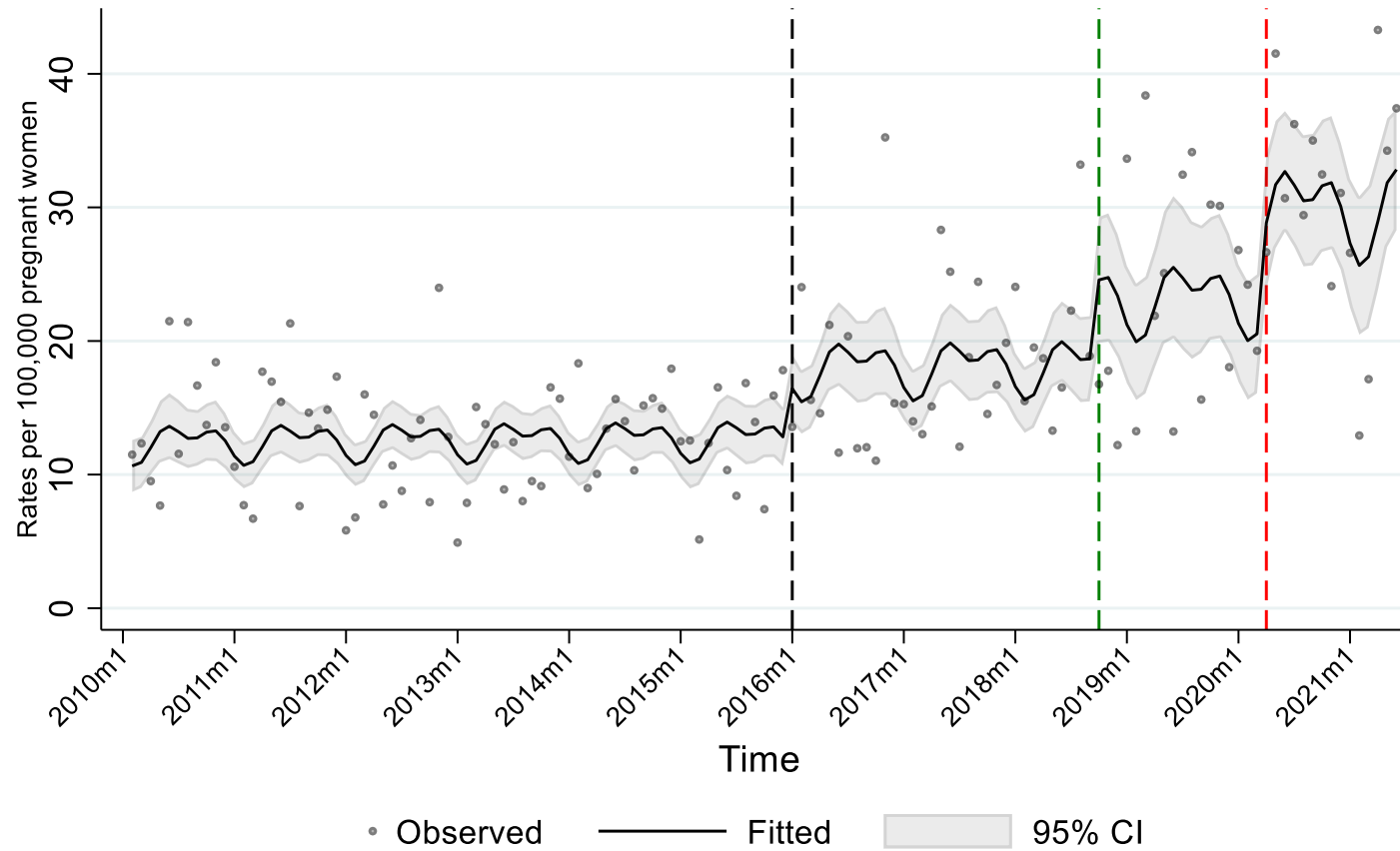
- Poisson and negative binomial distributions with robust standard errors
- Adjusted for seasonality (Fourier terms)
- With different definitions of the cannabis law (changes in level and/or slope since October 2018, or monthly disaggregated cannabis sales in tons according to the SQDC using the Chow-Lin method)
- Taking into account the COVID-19 pandemic (from April 2020).

The most parsimonious models are presented below (based on AIC/BIC)



## Results

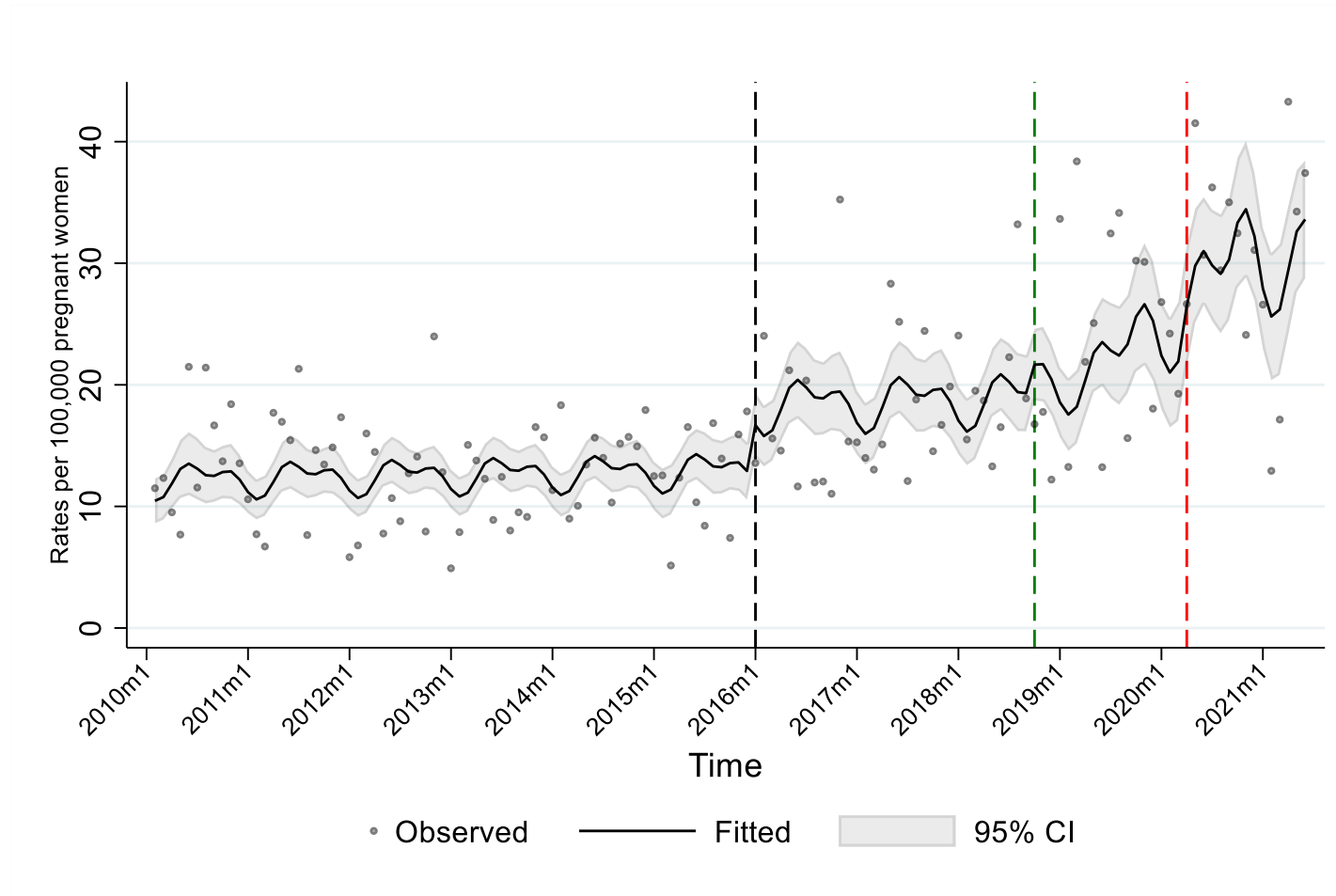
Poisson distribution with robust standard errors and cannabis policy as a level change (October 2018).





## Results

Poisson distribution with robust standard errors and continuous cannabis policy (monthly sales from SQDC in tons)



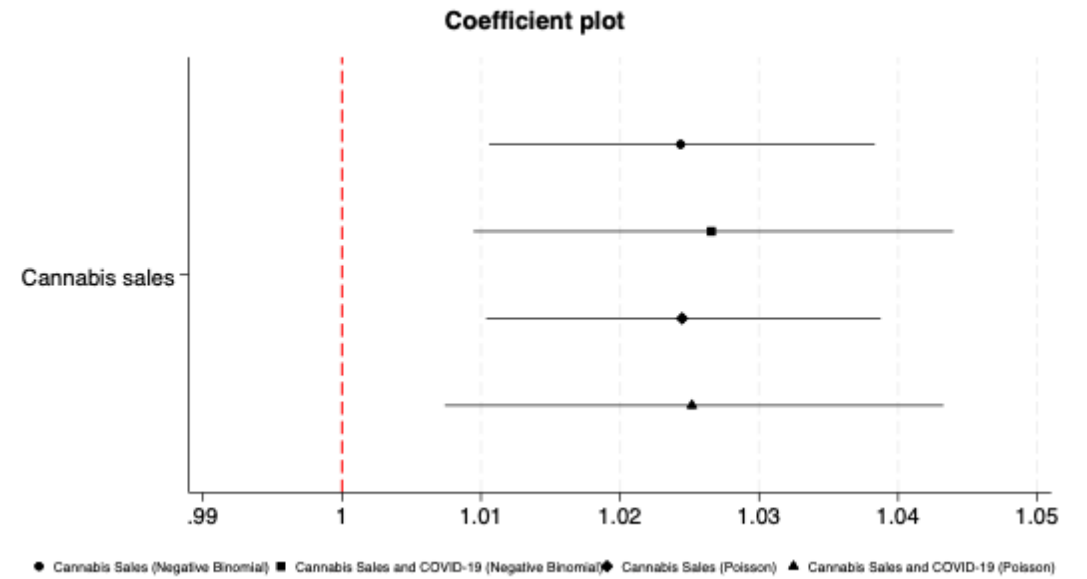
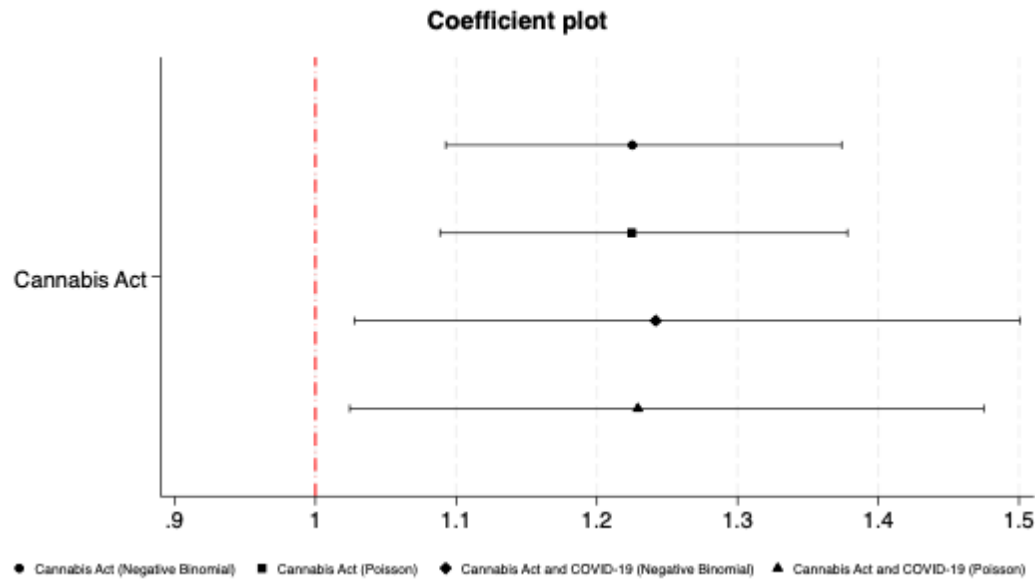




# Results

Four models with robust standard errors using cannabis policy as a level change (October 2018).

Four models with robust standard errors using continuous cannabis policy (monthly sales from SQDC in tons)





## Discussion

- Since at least 2015 we observe increases in cannabis use disorders in pregnant women in Quebec.
- Regardless of the operationalization of cannabis law we observe significant increments: 22% when we use a dichotomous measure and 2 % when we concentrate on cannabis sales within the province.
- **Interpretations:**
  - It is plausible that pregnant women might have perceived a more welcoming or accommodating health environment for addressing cannabis-related disorders after the enactment of the Cannabis Act.
  - Pregnant women may have sought thus help or treatment for such disorders within the health system.
  - However, the increment is observed before the enactment of the law, and the health system is relatively fragmented



## Discussion

- **Interpretations:**
  - The observed increase in this outcome may imply, however, that the implementation of the Cannabis Act may have influenced pregnant women who exhibit heightened vulnerability due to factors such as a prior history of psychiatric comorbidity, and exposure to traumatic life events.
  - The gravity of the long-term repercussions associated with cannabis-related disorders in this population, particularly in children, underscores the importance of conducting further investigations once data spanning more years becomes accessible.
  - Research suggests that females generally exhibit more negative attitudes toward cannabis use, possess a stronger perception that cannabis use is harmful, and tend to be less supportive of cannabis legalization. However, other body of research has suggested that cannabis is perceived by pregnant women as an “medical” alternative to tackle anxiety and/or nausea.
- Interestingly after COVID the incidence of cannabis use disorders did not vary



## Discussion

- **Future questions:**
  - Is this trend homogenous across pregnant women from different socioeconomic status?
  - Are health and social professionals responding to challenges associated with cannabis use disorder to prevent this outcome in pregnant women?
  - Are we observing changes in preterm birth, neonatal intensive care unit admissions, and/or low birth weight after the Cannabis Act.



Êtes-vous enceinte ou l'avez-vous été au cours de la dernière année ?  
Avez-vous consommé du cannabis dans les trois mois précédant ou pendant votre grossesse ?

**CONTACTEZ-NOUS**

À PROPOS DE NOTRE RECHERCHE

# Étude Cannabis-grossesse

Notre projet de recherche vise à mieux comprendre comment l'utilisation de cannabis chez les femmes enceintes a évolué au Québec, en accordant une attention particulière à leurs comportements individuels et ceux de leur partenaire, aux facteurs du système de santé ainsi qu'aux politiques en matière de cannabis.



Entre tension et harmonie : conversations  
autour de la consommation de cannabis  
chez les femmes enceintes au Québec

 **GROSSESSE**  
& CANNABIS

**Merci**

