Risk Factors for Continued Cannabis Use During Pregnancy

Chelsea K. Pike; Michael J. Sofis, PhD; Alan J. Budney, PhD
Dartmouth College

Center for Technology and Behavioral Health

Dartmouth GEISEL SCHOOL OF MEDICINE

Introduction

- Past-month cannabis use among pregnant women in the US increased from 3.4% in 2002 to 7.0% in 2016 (Volkow et al., 2019)
- Prenatal cannabis use has been linked to preterm birth, low birthweight, and placement in neonatal intensive care, but findings are not conclusive (Gunn et al., 2016; Hayatbakhsh et al., 2012)
- Quitting cannabis use upon becoming pregnant has been linked to:
  - Greater perceived risk of harm to the fetus
  - Never using cigarettes
  - Graduating from high school (Mark et al., 2017)
- Many other demographic variables, as well as pregnancy characteristics, cannabis use characteristics, psychological variables, delay discounting (DD), and perceptions of benefit may be related to continued cannabis use, but have not been explored

Method

- **Participants:** 296 pregnant women recruited via Facebook and Instagram completed an online Qualtrics survey
- **Inclusion criteria:** ≥ 18 years, live in U.S., currently pregnant, used cannabis weekly during the 3 months prior to pregnancy
- **Incentive:** 1 in 50 chance to win a $25 Amazon gift card
- **Measures:** demographics, pregnancy characteristics, cannabis use, cigarette use, perceived risk of cannabis use to the baby, perceived benefit of cannabis use to the mother, delay discounting (DD), anxiety (GAD-2), depression (PHQ-2)
- **Participants reported** whether they **quit** (*n* = 121; 41%), **relapsed/reduced** (*n* = 132; 45%), or **continued** cannabis use as usual (*n* = 43; 15%) upon discovering they were pregnant
- **Analyses:** chi-squares to compare between quitters, relapsers/reducers, and continuers on categorical variables, and one-way ANOVAs for continuous variables

Results

	Overall (*n* = 296)	Quit (*n* = 121)	Relapsed/ Reduced (*n* = 132)	Continued (*n* = 43)	p-value
Participant characteristics					
Demographics					
Maternal age (years) (M ± SD)	27.3 ± 6.1	28.4 ± 6.0	26.5 ± 6.0	26.3 ± 6.4	**.025**
Race (% white)	72	71	67	91	**.012**
College degree or higher (%)	47	57	39	44	**.018**
Married (%)	45	52	41	35	.078
Employed (%)	61	72	60	37	**<.001**
Used cigarettes pre-pregnancy (%)	29	18	35	44	**<.01**
Pregnancy characteristics					
Weeks pregnant (M ± SD)	18.6 ± 10.1	18.0 ± 10.3	19.9 ± 9.9	16.5 ± 9.7	.109
Primagravida (1st pregnancy) (%)	69	75	69	56	.063
Intended pregnancy (%)	49	57	49	28	**<.01**
Cannabis use characteristics					
Age started using (%)					.073
<18	45	41	45	58	
18-20	28	24	32	26	
>20	27	35	23	16	
Time to first use after waking, pre-pregnancy (%)					**.015**
≤30 minutes	19	15	18	35	
Use days/week, pre-pregnancy (%)					**<.001**
1-2 days	15	26	10	2	
3-6 days	24	31	21	12	
7 days	61	44	69	86	
Use times/day, pre-pregnancy (%)					**<.001**
1	19	31	11	9	
2-3	43	45	44	33	
4-5	27	17	34	35	
6+	11	8	11	23	
CUDIT-SF score (0-12) (M ± SD)	2.0 ± 2.8	1.9 ± 2.8	2.0 ± 2.6	2.6 ± 3.3	.345
Perceived cannabis risks/benefits					
Agreement with risks of prenatal use (0-52 scale) (M ± SD)	24.4 ± 8.1	29.1 ± 6.5	22.0 ± 7.3	18.4 ± 7.6	**<.001**
# of prenatal use benefits endorsed (0-13) (M ± SD)	7.5 ± 3.0	6.3 ± 3.3	8.1 ± 2.5	9.0 ± 2.5	**<.001**
Delay discounting (ln*k*) (M ± SD)	-5.3 ± 2.1	-5.7 ± 1.8	-5.1 ± 2.4	-4.9 ± 2.1	**.035**
Psychiatric symptoms					
GAD-2 score (0-6) (M ± SD)	2.5 ± 1.9	2.3 ± 1.9	2.6 ± 1.9	2.4 ± 1.9	.521
PHQ-2 score (0-6) (M ± SD)	1.9 ± 1.7	1.7 ± 1.7	2.0 ± 1.7	1.7 ± 1.7	.334

	% who agreed with each belief			
Beliefs about prenatal cannabis use	Quit (*n* = 121)	Relapsed/ Reduced (*n* = 132)	Continued (*n* = 43)	p-value
Results in a low birth weight baby	31	17	9	**<.01**
More likely to give birth prematurely	26	16	7	**<.01**
Affects child growth/development to 10 yrs	25	5	2	**<.001**
Can allow harmful chemicals to pass from mother to baby	45	21	14	**<.001**
Pregnant women should be encouraged to stop using cannabis	59	17	14	**<.001**
There is not enough help for pregnant women who want to stop using cannabis	42	35	19	**.021**
Cutting down amount of cannabis used per day reduces harm to the baby	45	49	28	**<.05**
Unsafe to use cannabis once baby is born	15	5	0	**<.01**

	Quit (*n* = 31)	Relapsed/ Reduced (*n* = 57)	Continued (*n* = 24)	p-value
Communications with doctor*				
Recommended quitting for pregnancy (% yes)	94	65	50	**<.01**
Discussed benefits of prenatal use (% yes)	13	32	42	**<.05**
Discussed risks of prenatal use (% yes)	68	74	63	.585

*Only includes participants who reported communicating with their doctor about cannabis (*n* = 112, 38%).

Conclusions and Future Directions

- Expected risk factors (cannabis use severity, education, employment), including perceived risk/benefit and DD, were predictive of quitting or continuing cannabis use
- The majority (62%) did not discuss cannabis with their doctor, but for those who did, recommending quitting and discussing benefits may have had an effect on their use
- Identification of these risk factors provides targets for prevention or intervention strategies
- Survey limitations: self-report, no verification of abstinence, retrospective data collection

Acknowledgements