

# Daily Cannabis Use During Pregnancy and Postpartum in a State With Legalized Recreational Cannabis

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**Objective:** To identify perceptions of risks and benefits of cannabis use during pregnancy and postpartum from the patient perspective.

**Methods:** Pregnant and postpartum (up to 3 months) women residing in a state that legalized the sale of recreational cannabis in 2012 were interviewed to determine their perceptions of risks and benefits of cannabis use during pregnancy and postpartum. Qualitative description methodology was used to identify common themes in the data. Nineteen (n = 14 pregnant; n = 5 post-partum) women who used cannabis daily while pregnant were interviewed about perceptions of risks and benefits of cannabis use during pregnancy and postpartum.

**Results:** Five themes, describing the participants' cannabis use while pregnant and postpartum, emerged from the data. These themes include (1) continued use for health management, (2) ongoing evaluative process, (3) mixed messages, (4) wanting more information, and (5) legal considerations. All 5 of these themes contributed to the overarching theme of *Taking Care of Mom and Baby*, which encompasses the mother's need and struggle to care for her own health and wellness, as well as that of her unborn baby.

**Conclusions:** In a state with legalized recreational cannabis, pregnant and postpartum women reported continuing daily cannabis use during pregnancy to take care of themselves and their baby. It is crucial for healthcare providers to follow national guidelines and explain risks of cannabis use during pregnancy and postpartum,

while also managing expectations based on patient history. A harm reduction approach to decrease cannabis use is vital to help pregnant women who are using cannabis for health management to continuously evaluate their use during pregnancy and postpartum.

**Key Words:** cannabis, marijuana, postpartum, pregnancy, qualitative study

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Cannabis use during pregnancy has significantly increased in the last 2 decades, growing 72.5% from 1999 to 2008 (Pan and Yi, 2013) and 62% from 2002 to 2014 (Brown et al., 2017). According to the National Survey on Drug Use and Health (NSDUH; 2002–2017), prevalence of past-month cannabis use, daily/near daily cannabis use, and number of days of cannabis use, all increased among pregnant and nonpregnant women aged 12 to 44 years (Volkow et al., 2019). Past-month use in pregnant women has nearly doubled, increasing from 3.4% to 7.0%, and daily/near daily use in pregnant women has more than tripled, increasing from 0.9% to 3.4% (Volkow et al., 2019). Notably, self-report NSDUH data indicate the majority of cannabis use among pregnant women is recreational (Volkow et al., 2019).

Cannabis use is more prevalent in the first trimester (6.44%) and decreases in the second (3.34%) and third (1.82%) trimesters (Volkow et al., 2017), as it is possibly used to treat nausea and vomiting (Westfall et al., 2006). Pregnant women who were past-month users of cannabis reported a higher rate of use in the first trimester (12%) compared to daily/near daily users (5.3%), but appeared to experience a more severe drop off in use in the second and third trimesters (Volkow et al., 2019).

Current evidence indicates cannabis use in pregnancy and postpartum is still growing, and gaps in research (eg, concerning breastfeeding) as well as methodological limitations require additional study and care in interpreting results (Conner et al., 2016; Metz and Borgelt, 2018; Ryan et al., 2018). Nonetheless, several studies provide evidence for harmful effects of cannabis use during pregnancy, breastfeeding, and postpartum (Metz and Borgelt, 2018), and Guidelines from the American College of Obstetrics and Gynecologists (ACOG) state that women should not use cannabis during preconception, pregnancy, and lactation (American College of Obstetricians and Gynecologists Committee on Obstetric Practice, 2015).

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The main psychoactive component of cannabis,  $\Delta^9$ -tetrahydrocannabinol (THC), is able to cross the placenta during gestation (Hutchings et al., 1989). While a link between cannabis use in pregnancy and perinatal mortality has not been established (American College of Obstetricians and Gynecologists Committee on Obstetric Practice, 2017), low birth weight has been associated with self-reported cannabis use (Hayatbakhsh et al., 2012; Gunn et al., 2016; Howard et al., 2019) and polysubstance use (Conner et al., 2016) during pregnancy. In addition, risk estimates for still-birth demonstrate “moderately” greater risk (American College of Obstetricians and Gynecologists Committee on Obstetric Practice, 2017) for women who used cannabis during pregnancy compared to women who did not use substances.

As THC is also passed to the baby during breastfeeding (Reece-Stremtan and Marinelli, 2015; Metz and Borgelt, 2018; Ryan et al., 2018), the Academy of Breastfeeding Medicine states that breastfeeding women should be counseled to reduce or eliminate cannabis use and to avoid infant exposure (Reece-Stremtan and Marinelli, 2015). In the past 40 years, the potency of THC increased 6- to 7-fold (Sevigny, 2013), and in the past 12 years the potency in the United States has doubled (McLaren et al., 2008). Thus, longitudinal studies from the 1970s to 80s may underestimate harmful effects of current cannabis use (Warner et al., 2014).

Legalization of cannabis across the United States has led to a changing legal and social environment with societal challenges that affect families, particularly pregnant and postpartum women who use cannabis (Krening and Hanson, 2018). While recreational or medicinal cannabis use has been legalized in 30 states and the District of Columbia, many of these states have not fully decriminalized possession or use of cannabis which has social and legal repercussions for pregnant/postpartum women who use cannabis: burden on child protection agencies (Jarlenski et al., 2017b), strained patient-provider interactions (American College of Obstetricians and Gynecologists Committee on Health Care for Underserved Women, 2011), and disciplinary or legal interventions that may have adverse psychosocial effects on a new family (Roberts and Nuru-Jeter, 2010; Roberts and Pies, 2011).

The perception that there is no risk to regular cannabis use increased 3-fold among reproductive-age women from 2005 to 2015 (Jarlenski et al., 2017a). Critically, 70% of pregnant and non-pregnant women believe there is slight or no risk of harm of using cannabis 1 to 2 times per week while pregnant (Ko et al., 2015). To date, there appear to be few published qualitative studies describing cannabis use experiences, beliefs, and attitudes of women who used cannabis during pregnancy (Jarlenski et al., 2016; Chang et al., 2019). One such study found that women attempted to reduce their cannabis use during pregnancy, used cannabis to help with nausea or to improve mood, perceived cannabis as natural and safe, and were unsure if it was addictive or if there were risks associated with prenatal cannabis use (Chang et al., 2019). In another study, women reported being unsure if cannabis was addictive or if there were risks associated with prenatal use due to perceived lack of or poor quality of evidence (Jarlenski et al., 2016). These findings are largely reflected in studies

utilizing quantitative methodologies to understand women’s perspectives about the health considerations in perinatal cannabis use, including NSDUH data (Jarlenski et al., 2017a) and surveys (Mark et al., 2017). Compared to women who did not use cannabis, women who continued cannabis use while pregnant often perceived no general or pregnancy-specific risk (Jarlenski et al., 2017a; Bayrampour et al., 2019). Women reported reasons for continued use during pregnancy related to lack of certainty regarding prenatal and postnatal risks, perceived positive therapeutic effects, and lower cost compared to cigarettes (Bayrampour et al., 2019). There was a lack of communication from healthcare providers, which women perceived as an indication that adverse outcomes of cannabis use during pregnancy were not significant (Mark et al., 2017; Bayrampour et al., 2019). It was also noted that legal fears have started to fade since legalization (Mark et al., 2017; Bayrampour et al., 2019).

Existing qualitative studies (Jarlenski et al., 2016; Chang et al., 2019) were conducted with women who either self-reported cannabis use or tested positive for cannabis via urinalysis while receiving prenatal care in a state where recreational cannabis was illegal, which likely has repercussions, leading to differential perceptions and beliefs concerning cannabis use during pregnancy. The goal of our study was to identify women’s perceptions of risks and benefits of cannabis use during pregnancy and postpartum as it relates to breastfeeding and parenting, in a state that has legalized recreational cannabis.

## METHODS

This study was conducted in Washington State. In 2012, Washington State legalized the sales of recreational cannabis, subsequently allowing adults in Washington State age 21 or older to purchase and possess cannabis (Washington State Liquor and Cannabis, 2016). We used Craigslist and community flyers to recruit study participants who called the lab to schedule an appointment for consent and an interview. If a participant missed her appointment, we made 3 attempts to contact her by phone to re-schedule. We sought to recruit pregnant and postpartum (up to 3 months) women who self-reported as using cannabis daily or occasionally while pregnant or postpartum. We defined occasional use as using cannabis at least once per month but less than daily. Prospective participants were excluded if they self-reported as being under age 18, not pregnant and not recently postpartum (ie, within 3 months of giving birth), or using cannabis less than occasionally. A \$50 gift card (restricted use through a chain store) was given to the participants to recognize their time and effort. The university’s Institutional Review Board approved this study.

We used a qualitative description methodology for this study (Sandelowski, 2000, 2010; Schreier, 2012) to capture participants’ perceptions of risks and benefits of cannabis use in the prenatal and postpartum phases. Qualitative content analysis involves combining concept-driven and data-driven analysis approaches to the text. An audit trail was kept throughout the analysis process to document decisions and next steps. Data saturation (Fusch and Ness, 2015) was reached within our sample as new information was attained

with additional interviews and further coding was no longer feasible. Please refer to Table 1 for the interview guide. Interviews lasted 20 to 60 minutes and were conducted in-person by a female researcher (authors OB, EB, and CLS) on the university campus in a clinical lab. Audio recorded interviews were transcribed and deidentified by a professional transcriptionist who signed an IRB-approved confidentiality agreement. Transcripts were coded iteratively as common themes were identified in the data (transcripts) to provide definitions and details of the most prominent ideas provided by the participants' responses. Four of the manuscript authors (CLS, CBL, OB, and EB) coded each manuscript independently initially and then met three times as a team to discuss, combine, and refine themes. Themes were further revised and reworded as the manuscript was prepared and the authors further engaged with the data. Any revisions that were made after the primary meetings were discussed via email and were made based on a full consensus of the 4 researchers who coded the transcripts. All coding was completed manually. Themes initially identified by each individual were discussed and retained, given agreement by all group members. If the themes lacked commonality amongst the research team, they were discussed with examples cited, and either revised or rejected. The team did not identify any themes that lacked agreement. As themes were discussed, example statements from the narratives were cited and compared, to ensure that the statements were coded consistently. Statements were coded exclusively into one category.

## RESULTS

Twenty-six women were assessed for eligibility and all 26 met inclusion criteria and were scheduled for a study visit. Seven did not attend their scheduled study visit (study visit no-show and did not return phone calls to reschedule). Nineteen women (*n* = 14 pregnant women; *n* = 5 post-partum), predominantly Caucasian and between 18 and 39 years of age, were interviewed to determine their perspectives on risks and benefits of cannabis use during pregnancy and postpartum. Women reported a range of economic status, from previously being without a home to being in a middle-class household.

*I'd been homeless and not nurtured well.* #14, pregnant, no other children

**TABLE 1.** Interview Guide

1. Please describe your views on using cannabis/marijuana during pregnancy and postpartum.
2. Please describe your own cannabis/marijuana use during pregnancy (and postpartum, if applicable).
3. If postpartum: Please also share with us your opinions about using cannabis/marijuana now that you have delivered- what are your thoughts about using cannabis/marijuana while parenting your infant?
4. How about your opinions about using while feeding (breastfeeding/ bottle feeding) your infant?
5. Please describe if or how you think cannabis/marijuana impacts pregnancy.
6. Tell me about what you consider the positive effects of using cannabis/marijuana while pregnant and/or parenting you infant.
7. Did your healthcare provider talk to you about your cannabis use? If so, what was said?

*My husband and I make six figures. We have a reasonable living. We own a home. We both own vehicles. [...] We're normal people. We're middle class.* #16, pregnant, has other children

Thirteen of the 14 pregnant participants had other children and therefore were also asked the postpartum interview questions. All postpartum participants were currently parenting their infants or other children. All participants reported that they smoked cannabis (vs edibles, etc) during pregnancy as it allowed them to better "control the high", and 1 participant reported also using concentrated doses of cannabis. All participants reported using cannabis daily (no participant reported only occasional use), and on average, participants reported smoking cannabis 3 times a day, typically around mealtimes or at morning, noon, and at bedtime. Phrases such as "small bowls" or "a few hits off a joint" were used to convey quantity of use. The following are comorbid conditions reported by the participants: anxiety, depression, bipolar disorder, substance use disorders, post-traumatic stress disorder, insomnia, anemia, chronic pain, *Helicobacter pylori*, osteoarthritis, and fibromyalgia.

Five themes describing the participants' cannabis use while pregnant emerged from the data. These themes include (1) continued use for health management, (2) ongoing evaluative process, (3) mixed messages, (4) wanting more information, and (5) legal considerations. All 5 of these themes contributed to the overarching theme of *Taking Care of Mom and Baby*, which encompasses the mother's need and struggle to care for her own health and wellness, as well as that of her unborn baby. All pregnant participants referred to themselves as "mothers" and to their fetuses as "their babies." In addition, each participant highlighted their own individuality in *Taking Care of Mom and Baby*. Participants commonly explained that their stories and lives are unique and described in detail that they each had their own individualized reasons for using.

*Weed smokers come from all different backgrounds and people and places you would never expect people to smoke.* #1, postpartum, has other children

*[...] Nobody you're going to interview knows everything [...] we're all just trying, I guess, to make that decision.* #5, pregnant, has no other children

*I've got some friends that got pregnant and they don't smoke weed. [...] They decided to take pharma nausea pills instead, and that's totally fine and that's totally okay. [...] It's really all about perspective. And that's why I'm so excited for this study. [...] It really is in the eye of the beholder for sure.* #6, pregnant, has no other children

## CONTINUED USE FOR HEALTH MANAGEMENT

Participants described use of cannabis as a method of health management. Accounts described cannabis use as a method of managing physical issues such as morning sickness, nausea, weight gain, pain, and sleep.

*I wouldn't trade anything in the world to be able to eat for my child. #6, pregnant, has no other children*

*It helps me feel hungry and it takes away my nausea completely. And it helps with the pain, too. And not so much that it takes away all of my pain, but it helps me mentally manage by pain better. #12, pregnant, has other children*

*[...] I want to be able to get past the pain so that I can actually be present of who I really am— cause when I'm hurting, it just distracts me from everything. #15, pregnant, has no other children*

In addition, participants described use of cannabis to manage psychological difficulties such as stress and anxiety, as well as trauma, during pregnancy.

*He was really abusive, and I ended up in the hospital. And I was losing a lot of weight and they were worried that I was going to lose the baby because my hCG levels weren't rising. [...] And so they were like, 'Well, you might lose the baby anyway.' And they stopped me from all my medication [depression and anxiety medication brand names]. So they decided to let me go home and smoke. [...] And so I did, and I was able to eat and I was able to go to sleep. And my hCG level started rising again. #5, pregnant, has no other children*

Participants also reporting using cannabis to help with parenting struggles such as stress, the physical toll of parenting, and communicating on a child's level. Participants stated that it helped them function so that they could be better mothers.

*Um, stress relief for sure. Um, it – it helps for relaxation and things like that. 'Cause parenting is tough. Parenting's tough. And being pregnant is tough 'cause it's physically tolling and emotionally tolling thing. Marijuana definitely has a – an easing factor for those things. #3, pregnant, has other children*

*It gets me up and going with my kids. Since I have four of them [...] so it gets me going throughout the whole day. I don't take a break really. I don't sit down really. #17, postpartum, has other children*

*So I want to answer that question carefully because it won't be the same for everyone. [...] I think it takes me down almost more like a childhood essence. [...] I'm more patient with children. It's easier for me to understand their immediate needs. #13, postpartum, has other children*

*I felt like it was consistently helping me calm down and be able to function enough – well enough to parent my six-year-old as a single parent and, um, deal with that – that kind of heartbreaking circumstances that I was in. [...] And I feel like if I didn't have cannabis, I wouldn't be able to function working, going to school, and taking care of my child. We also were living with my – um, this baby's father and working out like how we're going to cope here, even if we break up or something. 'Cause we both want to be*

*available – good parents in spite of our differences. #9, pregnant, has other children*

## ONGOING EVALUATIVE PROCESS

Cannabis use appears to be facilitated by an ongoing evaluative process, gleaned from participants' discussions of their iterative decision-making. Participants described weighing options such as using cannabis as an alternative to medications they were afraid could potentially be more dangerous for the baby such as opioids, nonsteroidal anti-inflammatory drugs, and anti-nausea medications.

*I feel like if I could stop, I'd prefer not to be smoking, but since I can't, I'm glad it's there instead of taking like hard prescription [...] 'Cause they had me on hydros after the event and stuff, I wanted to not be on those. #5, pregnant, has no other children*

*[...] Before cannabis I was taking eight to ten ibuprofen per day, and that was not good for me. But I didn't really know any different. #15, pregnant, has no other children*

*And so in order to work and survive, I have to take medicine. And I'd rather take something that's more natural than, um – like I'm prescribed [anti-nausea medication brand name]. #8, pregnant, has other children*

Participants described using cannabis in moderation during pregnancy, cutting back use, and making informed decisions about their consumption. They compared cannabis use to caffeine and fast food consumption and contrasted it to cigarette and alcohol use.

*I'm not smoking [cannabis] as heavily, you know, as I did before I was pregnant or anything. So in moderation is always key. [...] As soon as I found out I was pregnant, I mean, I quit smoking cigarettes cold turkey. #6, pregnant, has no other children*

*Alcohol, on the other hand, I will throw that away. #3, pregnant, has other children*

*So it kinda cuts a little bit of the edge off without being something like nicotine or something worse. Caffeine – you know, you have caffeine addictions, and that makes you super stressed out. #19, pregnant, has other children*

Some participants were re-evaluating their cannabis use postpartum due to concerns of THC passing to their baby during breastfeeding. Participants also shared their views on cannabis use when children are present.

*I just don't think that I will be using it while breastfeeding more than occasionally like at night – sleeping – or just kind of as like a general overall anxiety reducer. Just because I think it will prevent me from bonding with her as well. #9, pregnant, has other children*

*'Cause the cannabis would be going into the milk and I don't know how I feel about that exactly. It's something I'm going to think about with this child, though. I'm unsure. #12, pregnant, has other children*

*If you're bringing your child up and you're smoking, don't try and keep it from your children. Don't try and go into a different room. Of course, don't blow it in their face and don't be around them like completely like right next to them, but don't take it into another room and lock them out. It'll grow curiosity. It'll be more likely that your child gets into cannabis use before the age of twelve if you lock them out of the room because they grow curiosity and they find out and so on.* #14, pregnant, no other children

### MIXED MESSAGES

Participants commonly reported receiving mixed messages from healthcare providers that often conflicted with their own experiences using cannabis while pregnant. Providers frequently promoted complete abstinence from cannabis during pregnancy. They educated participants that using cannabis while pregnant could harm the baby or told them that there was just not enough research documenting safety.

*My doctor, he doesn't like that I use marijuana at all. [...] And once I was pregnant, he's like, 'You've got to stop.' And I did stop when we talked about it. But then when I told him my OB's decision to let me linger a bit, at least until I'm like 20 weeks or so to see if the morning sickness goes away [...] He doesn't like it, but my OB doctor totally understands.* #5, pregnant, has no other children

*They told me that it wasn't safe during pregnancy. [...] They said, 'Well, we do mandatory UAs here during pregnancy.' [...] It's a drug just like every other drug on the street to them.* #1, postpartum, has other children

Other providers took a harm reduction approach, encouraging participants to limit their cannabis use for the same reasons. Much of the information on potential negative effects on the baby that was gleaned from providers was tempered by the participants' own personal positive experiences. Many spoke about using cannabis while they were pregnant with other children and explained that they felt those children were smart, active, and functioning well.

*'Cause I was actually using meth and heroin at first – at the beginning of this pregnancy. And so her kind of opinion was obviously 'I'd rather not have you doing anything, but that's a lot better than the alternative that you were using.' [...] Like the marijuana kinda helped me and the methadone helped me get off of the other drugs.* #7, pregnant, has no other children

*I mean, since I'm no doctor or anything, I don't really believe – only 'cause I've had two babies –that it affects anything physically about the baby or while it's growing inside or anything. I don't see any problem with it.* #4, postpartum, has other children

*They give you their spiel about why you should quit. You know, why it's not good for you and this and that. Which again, in my own life I haven't seen, so I can't say I've paid too much attention to what they're saying at that point. -* #19, pregnant, has other children

Some participants reported that they had never been asked about their cannabis use by healthcare providers. Others explained that when they made their providers aware of their cannabis use during pregnancy or postpartum, the providers did not bring up any concerns with use or did not discuss it with them further. One participant reported that she was told that THC does not get passed to the fetus.

*I currently have a midwife, and she has not talked to me about it.* #10, pregnant, has other children

*I brought it up to some of the midwives. All of them I've let know I use cannabis, and all of them are completely fine with it.* #14, pregnant, has no other children

*[...] I told all my doctors and everything that I was [using cannabis], and they never said anything to me one way or the other.* #11, postpartum, has other children

*She [primary care provider] said that she smoked while pregnant and smokes, so that made me feel better.* #18, pregnant, has other children

*The pediatrician came in and said he had drug tested the baby and that it was negative. I said I used marijuana while I was pregnant, so the baby should've tested positive for marijuana. And that pediatrician said something along the lines of, you know, 'THC doesn't pass to a fetus during pregnancy.' So I'm not sure if that's actually true or not or there's been any scientific studies about that, but it gave me the belief that I was not harming the fetus during the pregnancy because of using marijuana.* #2, pregnant, has other children

### WANTING MORE INFORMATION

Every participant interviewed stated that she wanted more research that could provide information on the safety and effects of using cannabis while pregnant. Participants were frustrated over the lack of research and consistent information available to them.

*[...] I think it's very important that more research on the subject is pursued, because there just isn't enough information for people to make informed decisions. [...] I have had moments of being worried or feeling guilty because I would breastfeed while under the influence. If I was given more information, you know, per scientific research studies, I could maybe make a more informed decision [...].* #2, pregnant, has other children

*[...] She has a PhD. And she's helped me do some of my own research to determine before I was pregnant previously whether or not I felt this was an acceptable time to use cannabis. I came to the conclusion it was. The benefits outweigh the risks.* #16, pregnant, has other children

Many reported that they were not getting enough information from medical providers and looked to employees of cannabis retailers for additional scientific and medical information on using cannabis for ailments during pregnancy. Participants were also endorsing patient-centered research.

[...] I feel like there's nowhere you could go where you could safely talk about it and be completely educated on it without stigma or without someone having a bias about it. #9, pregnant, has other children

I have a couple of friends that are budtenders and I was actually having a discussion with one of my friends and we were talking about the terpenes. [...] I can fine tune what kind of marijuana I'm buying to my certain ailments. #12, pregnant, has other children

They [budtenders] are very helpful people. I would never guess that they would know as much as they know. [...]. And they gave me what I – they thought that I needed and would help, and it did. #18, pregnant, has other children

Researchers [...], they most likely don't do it themselves is what I'm seeing, so it's a good thing people are being brought in [to participate in research]. Because a user would know how to explain those kinds of things better. #14, pregnant, has no other children

## LEGAL CONSIDERATIONS

Participants reported that they often did not disclose cannabis use to healthcare providers because of stigma surrounding the issue and feared legal repercussions such as Child Protective Services (CPS).

I'm a very private person about this because there's so much negative stigma on it that I don't want that. #8, pregnant, has other children

It would mean the world I'm sure to a lot of different people to not have to be looked at differently for using it. Because it helps. #6, pregnant, has no other children

And I was like, 'Is that like legal? Can you smoke while you're pregnant?' And she said that I can't get in trouble for it, but I still worry a little about it. She said, 'Just be aware that if you use any for labor or anything like that, do not let the nurses know at the hospital because they will report you to CPS.' She said, 'I will not. I would not do that. [...]' She said, 'Just be aware the nurses at the hospital have a different view.' #5, pregnant, has no other children

This fear of intervention by CPS functioned to both temper their disclosure to providers and to modify their patterns of use, as it was mentioned that they did not want to have their use discovered in the hospital giving birth. Participants vacillated between fear of CPS and insistence that no legal issues would arise because of the legality of recreational cannabis in Washington State. They noted frustration at disrupting cannabis use towards the end of pregnancy due to fears of legal repercussions when cannabis was used to help with their chronic pain, anxiety, etc.

She got me kinda really scared, talking about CPS and how I need to stop and how it's not good for the baby, that CPS will come in after I have her to talk to me. And I got really scared, and I talked to my actual doctor. And she said that there were no studies saying it was bad or good. [...]

They- CPS- won't really do anything about it. It's legal here, so you'll be fine. #18, pregnant, has other children

I did refrain from use in my last month of pregnancy and then for two months afterwards. Mostly because of the legal ramifications. [...] I get really frustrated and angry that I feel like I have to, you know, make a choice that could be detrimental to my own well-being, and even the baby's, because there's a legal blockade right there. #16, pregnant, has other children

I was afraid to smoke marijuana during my pregnancy because of the stigma around it and, you know, I don't want Social Services to get called on me [...] You can't discriminate against it. Because it's legal, you know? #1, postpartum, has other children

## DISCUSSION

In a state with legalized recreational cannabis, pregnant and postpartum women reported continuing daily cannabis use during pregnancy for personal, individualized reasons to take care of themselves and their baby. The women continued use for health management, continued to evaluate their use during pregnancy and postpartum, often received mixed messages from healthcare providers, expressed frustration over lack of information on health risks, and often changed use due to legal considerations.

Participants felt they were making the best decisions for themselves and their baby. Many explained that it helped them manage physical symptoms, such as nausea, so they could eat and provide nourishment for their baby. These perceived positive therapeutic effects are consistent with what other researchers have found (Bayrampour et al., 2019). Our participants explained that cannabis helped them manage stress so they could be better parents. Women based their decisions on what they believed would help them, translating into benefits and protection for their baby. These decisions often resulted in minimal cannabis use – only as much as participants felt was needed for their health management in order to limit exposure to the baby. In addition, many women decided to use cannabis instead of prescription medications because of concerns that pharmaceutical agents would cause harm to the baby. Similar to a study conducted in Pennsylvania (Chang et al., 2019), participants reported continued use for health symptom management and viewed cannabis as a “safer alternative” to pharmacotherapies.

Every mother interviewed wanted to better understand the risks and benefits of cannabis use for their baby. They wanted to feel more confident in the decisions they were making to care for themselves and their baby, but often received mixed messages from providers. Similar to Jarlenski et al. (2016), our participants perceived a lack of evidence demonstrating risks associated with cannabis use during pregnancy. Other participants stated that when they made their providers aware of their cannabis use, the providers did not discuss it with them further. This is in line with findings from a content analysis of audio-recorded patient-health care provider responses, where approximately half of healthcare

providers did not respond to cannabis use disclosures or offer counseling to pregnant women (Holland et al., 2016). Of the healthcare providers that did provide counseling to pregnant women that disclosed cannabis use, specific information on the risks related to cannabis use in pregnancy was not given. Relatedly, our participants felt they were making the best decisions they could with the information they had.

Participants also discussed curtailing use at the end of the pregnancy to avoid the risk of having their baby removed from their care by CPS. Participants in the Chang et al. (2019) study reported a reduction in use across pregnancy, and women we interviewed reported the same trend, with the decrease in use noted during the third trimester due to legal considerations. Participants in both studies reported wanting more information on the effects of prenatal cannabis exposure. In contrast to previous research, additional themes of legal considerations and mixed messages emerged for our sample, most likely due to differences in legality of cannabis across the states wherein data were collected. The latter may also explain the distribution across socioeconomic strata for participants in our study. The rapid changes in the legal landscape surrounding cannabis use, including the growing number of states legalizing recreation cannabis use in the last few years, warrant continued assessment of relevant perceptions of pregnant and parenting women.

We were unable to recruit participants who used cannabis less than daily, counter to prevalence data that reports less than daily cannabis use is more common and reports that women decrease use in the second and third trimesters (Volkow et al., 2017). It may be that only women who use cannabis daily were compelled to be interviewed by researchers, or that the majority of women reporting cannabis use during pregnancy have committed to daily use for various health management strategies. However, current research shows past-month daily/near daily cannabis use during pregnancy is also increasing (Volkow et al., 2019).

Although some participants noted risks to their baby associated with cannabis use during pregnancy, we found that many were not counseled on decreasing or abstaining from cannabis use during pregnancy and lactation, as recommended by ACOG (American College of Obstetricians and Gynecologists Committee on Obstetric Practice, 2015; Reece-Stremtan and Marinelli, 2015). Similar to previous research (Mark et al., 2017; Bayrampour et al., 2019), lack of counseling was perceived as indication of no risk of cannabis use during pregnancy. Of those who were counseled, participants reported feeling stigmatized during these discussions and sought medical and scientific advice elsewhere (ie, from friends and cannabis retailers).

### STRENGTHS AND LIMITATIONS

There are numerous strengths to our study. First, we were able to capture experiences of women using cannabis while pregnant and postpartum in a state where the overall perception of harm resulting from cannabis use has decreased since legalization (Jarlenski et al., 2017a). Participants ranged across the socioeconomic strata and were able to report about postpartum cannabis use. Participants also offered information they received from obstetricians, nurse midwives, and

primary care physicians. As the legal landscape of cannabis is changing across the nation, and health messaging is increasing from pro-cannabis sources, participants from Washington State can help researchers and clinicians improve patient education. The primary limitation involves our predominantly Caucasian sample. While representative of Washington State, future research needs to assess perceptions of risks and benefits of cannabis use in other racial and ethnic populations as culturally-driven beliefs may influence use or abstinence during pregnancy. In addition, 7 out of 26 women (27%) who were eligible for the study did not respond to our requests to schedule an interview. It may be that those who were more ill, had more stressful lives, or were concerned about possible legal ramifications of disclosing cannabis use, chose not to participate in the study. Lastly, we did not conduct “member checking” with participants after summarizing the transcripts in order to establish credibility and trustworthiness of our findings, as we did not keep contact information in an effort to provide additional protection to those taking part in research.

### CONCLUSIONS

As legalized recreational cannabis becomes more prevalent across the United States, healthcare providers need to more fully assess health-related factors (eg, comorbid conditions), engaging in shared decision-making processes with pregnant patients. We found that pregnant and postpartum women were continuing daily cannabis use in an effort to take care of themselves and their baby. Selective intervention programs such as the Nurse Family Partnership (Olds, 2006) may provide opportunities for healthcare providers to engage with this population and provide education and guidance, without stigma, helping mothers reduce or eliminate cannabis use during pregnancy and postpartum and improving maternal and child health. It is crucial for providers and other staff to follow national guidelines and explain risks of continued cannabis use during pregnancy and postpartum, while also managing expectations based on patient history. A harm reduction approach to decrease cannabis use is vital to help pregnant women who are using cannabis for health management continuously evaluate their use during pregnancy and postpartum. If these discussions with patients are not undertaken, women will seek medical information elsewhere, often from employees in cannabis retail stores. Pregnant women who used cannabis for health management reported feeling that they made the best decisions for themselves and their baby. Therefore, reduced stigma is needed throughout the healthcare system so that women do not choose to stop communicating with their providers in an open and honest manner. Lastly, additional research is needed to determine long-term effects of cannabis use during pregnancy and lactation, disentangling these effects from other substances, on birth outcomes and child development.

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