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Perspectives from women who engaged in prenatal and postpartum cannabis use in a U.S. State with legal non-medical use

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ABSTRACT

Evidence suggests fetal risks are associated with cannabis use during pregnancy. Yet, insights into women's decision-making and cannabis use during pregnancy are limited. This study explored these concepts with postpartum women who used cannabis during and after pregnancy. We conducted interviews with 15 women (4 self-identifying a race other than White and 4 self-identifying Hispanic ethnicity) who: 1) lived in the Puget Sound region of Washington State, 2) reported past-year cannabis use on a routine screen, and 3) had documented pregnancy and delivery March 2015–May 2017. Semi-structured interviews asked about decision-making and cannabis use during pregnancy and postpartum. We used template analysis for coding and analysis. The key findings included that women: 1) gathered information about cannabis use during pregnancy primarily through internet searches and discussions with peers; 2) were reluctant to talk with health care providers about cannabis; 3) used cannabis while pregnant to treat health issues, including morning sickness, pain, and mental health conditions; 4) were comfortable with their decision to use cannabis while pregnant, but had questions about long-term effects; and 5) tried to mitigate transmission through breastmilk. Women decided about cannabis during pregnancy based on their experience, health symptoms, and information gathered from the internet and peers, often without guidance from their health care provider. Results point to opportunities for providers to become informed about and engage in discussion with patients about cannabis use during preconception, pregnancy, and postpartum.

1. Introduction

Up to 7 % of pregnant women in the U.S. report past-month cannabis use, with 10 % reporting use at some point in pregnancy. (Alshaarawy and Anthony, 2019; Volkow et al., 2019; Young-Wolff et al., 2019; Kaarid et al., 2020; Mark et al., 2017/05 2017) Increased use may be attributed to state legalization of medical and non-medical cannabis, alongside declining perception of risk. (Braillon et al., 2018; Brown et al., 2017; Hasin and Walsh, 2021; Proceedings from the 11th Annual Conference, 2019; Cannabis overview, 2021; Compton et al., 2016).

While evidence implicates prenatal tobacco and alcohol use with fetal risks, (Pereira et al., 2017; Popova et al., 2017; Sundermann et al., 2019) consequences of prenatal cannabis exposure are unclear. (Conner et al., 2016; Goler et al., 2018; Roncero et al., 2020; Thompson et al., 2019) Evidence suggests increased risk for lower birth weight, (Corsi et al., 2019; Gunn et al., 2016; Nguyen and Harley, 2022) neurodevelopmental changes, (El Marroun et al., 2016) childhood psychopathology (Paul et al., 2021) preterm delivery, small for gestational age, and neonatal intensive care unit admission. (Marchand et al., 2022) Recommendations discourage use during pregnancy and breastfeeding, (Committee Opinion No, 2017) yet providers may be unfamiliar with the potential consequences and need for counseling about cannabis use, influencing perceptions of risks and benefits (Holland et al., 2016; Young-Wolff et al., 2020) and leaving women to rely on other information sources. (Bayrampour et al., 2019; Jarlenski et al., 2016).

Insights into understanding, decision-making, and actions regarding cannabis use during pregnancy are limited. Two studies interviewed pregnant women who indicated cannabis use on a survey or had a positive screen prior to state legalization. For information, most relied on the internet and friends and did not consider medical providers helpful. (Jarlenski et al., 2016) Many reported using cannabis for nausea and appetite, believing it was safe, but were concerned about long-term

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or unknown risks. (Chang et al., 2019) In a study of pregnant and postpartum interviewees shortly after Washington's legalization of nonmedical cannabis use, (Barbosa-Leiker et al., 2020) women feared legal repercussions for revealing cannabis use during pregnancy.

Our study advances the prior work with in-depth qualitative interviews with a unique population of postpartum women who used cannabis while pregnant. Interviewees were identified based on a population-based cannabis screen in routine care at a large, integrated health system, allowing recruitment of interviewees who self-reported varying frequencies of cannabis use, Hispanic ethnicity, and race other than White.

2. Methods

2.1. Setting

Washington state legalized medical cannabis in 1998 and nonmedical use in 2012, which allowed cannabis purchase for medical use without provider authorization. In 2015, Kaiser Permanente Washington (KPWA), a large integrated health system, implemented population-based behavioral health screening, including a single-item about past-year cannabis use, into routine adult primary care. (Lapham et al., 2017; Richards et al., 2019; Sayre et al., 2020; Yeung et al., 2020) The screen was adapted from a validated alcohol screen. (Lapham et al., 2017; Babor, 2001).

2.2. Sample

We recruited women 21–45 years of age: 1) living in the Puget Sound region of Washington State, 2) reporting past-year cannabis use on the screen, with 3) documentation of a pregnancy overlapping the cannabis screen date and delivery between March 2015 and May 2017, with deliveries occurring 2016–2017 (as we ensured ≥3 months between delivery and sampling). Recruitment prioritized those reporting weekly or daily/almost daily use. Interviews were conducted in 2017, and limited to women 21 and older who could legally use cannabis. Exclusions were for: not proficient English speaker, KPWA employee, or documented serious psychiatric disorder diagnosis; 59 met criteria, with 50 sent invitation letters with a phone number to volunteer or opt out, July-September 2017. Letters and phone follow-up prioritized women reporting more frequent use.

The research team conducted outreach calls 2 weeks after mailing. Eligible women were scheduled for in-person qualitative interviews at a KPWA clinic, with interviews completed August-November 2017. Written informed consent was obtained before interviews. This study received approval and waiver of Health Insurance Portability and Accountability Act authorization from the KPWA Health Research Institute Institutional Review Board.

2.3. Data collection

Interviews used a semi-structured guide (Supplemental Material) focused on understanding lived experience with cannabis use during and after pregnancy, including information gathering, decision-making, interactions with others about cannabis use, and experiences using cannabis postpartum, including breastfeeding.

Interviews by an experienced interviewer (CH) were audio-recorded and scheduled for 1 h; most took the full time. On completion, participants completed a brief paper-based demographic survey with 12 questions about socioeconomic status, prior pregnancies, and recent pregnancy care. Participants received $100 as thanks.

2.4. Data analysis

Interviews were professionally transcribed and deidentified. Analyses were completed by four team members (CH, LK, JE, PW) with input from a fifth (GTL). Using template analysis, *a priori* and emergent themes/codes were identified from a diverse subset of transcripts to create a draft code list and codebook. Coders independently coded an interview, then the team met to discuss codebook revisions and reconcile coding through discussion consensus. After repeating for three transcripts, the team agreed the codebook had stabilized, with high agreement on application of codes and definitions. With a finalized codebook, remaining transcripts were coded by two coders, who met and reconciled differences. The full coding team met regularly to discuss emergent questions and confirm coding accuracy and consistency. On coding completion, data were pulled by code, with selected codes further analyzed and summarized into analytic coding memos, (Leavy et al., 2014) as the basis for the findings.

3. Results

Of the 15 interviewees, 11 continued to use cannabis after learning of their pregnancy (study IDs starting with 'C') and 4 discontinued after learning of pregnancy (study IDs starting with 'NC'). Most interviewees (74 %) reported first cannabis use before age 18 (Table 1). Many were currently working; their racial and ethnic distribution was generally representative of the community.

Table 1
Characteristics of study sample.

	N (%)
Past-year cannabis use from screen	
≤monthly to monthly use	4 (26 %)
Weekly use	5 (33 %)
Daily use	6 (40 %)
Age (mean in years [SD])	**35**
Race	
American Indian or Alaskan Native	1 (7 %)
Black or African American	2 (13 %)
Native Hawaiian or Pacific Islander	1 (7 %)
Unknown or not reported	1 (7 %)
White	10 (67 %)
Ethnicity	
Hispanic	4 (27 %)
Partnership Status	
Married or living with partner	12 (80 %)
Not married, and not living with a partner	3 (20 %)
Primary provider for pregnancy	
Obstetrician	9 (60 %)
Family physician	1 (7 %)
Midwife	5 (33 %)
Education	
Some high school	1 (7 %)
High school graduate or GED	4 (27 %)
Some college	5 (33 %)
4-year degree or more	5 (33 %)
Number of people in household	
2	1 (7 %)
3	7 (47 %)
4	4 (27 %)
≥5	3 (20 %)
Employment	
Full time	9 (60 %)
Part time	3 (20 %)
In school/vocational	1 (7 %)
Homemaker	2 (13 %)
Births	
1	9 (60 %)
2	1 (7 %)
3	3 (20 %)
4	2 (13 %)
Months since delivery, range (mean)	4–23 (11)
Age at first cannabis use	
11–13	4 (27 %)
14–18	7 (47 %)
>18	2 (13 %)
Missing	2 (13 %)

SD, standard deviation; GED, General Educational Development.

Results centered on 5 key themes: 1) seeking information about risks of cannabis use during pregnancy, 2) interactions with medical providers, 3) reason for using cannabis during pregnancy, 4) reflections on cannabis use during pregnancy and after giving birth, and 5) breastfeeding and cannabis use. Table 2 has additional quotes to support themes.

1. Seeking information about risks of cannabis use during pregnancy.

Interviewees described gathering information about cannabis use during pregnancy primarily through internet searches, finding little conclusive evidence, and discussions with individuals thought to be open to the topic. Many avoided discussions with medical providers, fearing judgment.

I just kind of would Google it and see what would come up, and mostly what I saw was that there just haven't been enough case studies to know long term effects or anything. But there wasn't really positive or negative from what I remember reading. (C11)

Women who continued to use during pregnancy reported talking to friends who used cannabis during pregnancy, factoring their stories into decision-making:

I felt like a lot of them were more open to it when we were talking to each other in a more relaxed setting, like they were more open and honest about "I did use this when I was pregnant" and "oh, in my early stage of pregnancy I did too," and it didn't seem to harm their child at all. So I felt more comfortable with it. (C07)

2. Interactions with medical providers

Interviewees were especially reluctant to discuss cannabis use during pregnancy with their providers, and many reported never discussing it.

I don't think I really brought it up, because I was kind of weird about talking about it, because marijuana is such a taboo thing that even though I personally am for it. (C12)

Those who did talk to their providers about cannabis use during pregnancy reported receiving a spectrum of advice, from abstinence to providers implying they agreed cannabis was a safe substitute for prescription medications.

So like the first time it was definitely like no, you can't, you can't, you can't. And the second time it was more well, if you do because you can't eat or whatever, obviously we give it to medical people for cancer, so there's some side effects, but we're not totally sure. (C03)

One woman recounted her experience of the range of messages she received from different providers about cannabis use.

Some providers will actually tell you to quit, some providers will say it's not good for you—I don't believe in it, I'm not a supporter. Some providers don't say anything. Some providers are very, you know, "Thanks for the information, I needed to know this." Some providers are supportive…It just depends. (C14).

3. Decision-making regarding cannabis use during pregnancy

Those who continued using cannabis during pregnancy described how they gathered information and made the decision to continue use. One key aspect of decision-making was weighing cannabis risks against their own experiences, values, and health needs, compared to other treatments available. Most recognized that using cannabis was not risk free but felt that benefits outweighed risks.

I looked through a lot of the regular websites, like the Baby Center and there's Kelly Mom and that kind of stuff. And then I started to look up science articles and that kind of thing to try to find research…. I made the decision to not smoke it, and instead go vape, so if you want to call it an aromatherapy device (laughs). But I felt that would at least take away the smoking aspect. (C13)

Table 2
Quotes supporting identified themes.

1. Seeking information about the risks of cannabis use during pregnancy
I was trying to look for more medical studies about it, and I couldn't really find anything. (C07)
I heard that [friend's wife] also smoked while she was pregnant, so that kind of gave me the idea like oh, if they were okay with that …. They're like really good people, so that kind of made me think about it, so that's why I started looking into it. (C12)
…I had friends that were like yeah, I had really bad morning sickness so if I smoked pot, it helped. Then there was the time my friend actually went to the doctor, and the doctor's like, you are not gaining the weight you need to gain so you need to eat, and that means you need to smoke pot to eat. It was like okay, the doctor's going to tell you that you need to smoke the pot to eat, because you're not gaining the weight to give it to your baby, so obviously that's a positive. (C03)
2. Interactions with healthcare providers
I didn't feel comfortable explicitly talking to them about it, no. Unfortunately, sometimes you just don't know what kind of response you're going to get from someone. (C11)
I felt that was weird so I'm like I won't say nothing. I don't know. I'm sure a lot of people would do the same.(NC02)
They threatened to call CPS [Child Protective Services] *and I told them that they can do that, but I'm using it as medication. That was when I had to go use the green card. (C10)*
I think at my first follow-up appointment I did tell them that I smoked, and they didn't really have a response to it either way. (C07)
My doctors - they couldn't say that they agreed with it, but they said, "we'd rather you'd do that than take Xanax," because it's a category D, it's not good during pregnancy. So in a roundabout way she told me don't worry about it. (C08)
3. Decision-making regarding cannabis use during pregnancy
…you can take medicine when you're pregnant. You can't take ibuprofen, but you can take either Percocet or Vicodin, I can't remember which one. But if you can take that high of a pill drug, then to me, I think it might be okay if you were to smoke a little bit, to help whatever pain or restless whatever you're going through. (C12)
I couldn't really find anything online that really talked about it, and so I just decided not to. (NC02)
I actually found out, the day I found out I was pregnant I stopped and stopped all the way up until she was born. That was my decision, but a lot of it was - my husband was definitely very against it. (NC01)
I talked to my husband about it, and he was okay with it. He just didn't want me to make a habit of it. Which I never had a problem with making a habit of it. (C12)
And then I got pregnant with my daughter and I didn't smoke a lot during that pregnancy because her father didn't want me to. He was like I don't want you to smoke a lot during this pregnancy, and I was like, okay. So I smoked once in a while, maybe once every-three months or once every-two months I smoked. (C14)
So the first time I smoked while I was pregnant, oh my gosh, God sent that specially for me on that day (laughter). Oh my God, it was the most helpful thing ever… - so it got to the point where I knew if I didn't, like, I'd have to wake up and smoke within a minute because I'd start throwing up if I didn't…… And it literally saved me. (C10)
P: Oh, I had hyperemesis gravidarum with both my pregnancies, so I threw up a lot, and the cannabis kind of helps the nausea a little bit - not a lot, I still lost 25 lb, but it definitely helps. So I did smoke during both of them for that. *I: So that was also a factor?* *P: A huge factor - during pregnancy, yes. That was a big factor. (C08)*

(continued on next page)

Table 2 (*continued*)

So I smoked pot to help with the morning sickness, and it didn't matter if it was morning or night, afternoon, I had it all the time. It was horrible. (C03)
I went off of some of the medication, that's what I did. And it kept me somewhat calm and less anxious, it definitely helped for sure. (C08)
I only did it three or four times throughout my whole pregnancy when I absolutely needed it. When I just crying and I needed rest. (C12)
It did help, but again, because I was feeling guilty and there aren't enough studies to know if it's safe or not, I was like my doctor's giving me this - there's more studies around Zofran than there is around cannabis while pregnant, so I'll change to that. (C11)
4. Postpartum reflections on cannabis use during pregnancy
It helped, because my boobs hurt, so it like relaxed me after breastfeeding. (C14)
I don't think there was any one reason besides the fact I just wanted to calm down or maybe just laugh. Because the whole thing is really stressful. (C15)
I'm busy all the time and sometimes I feel like I'm like going through the motions in life to take care of responsibilities that we all have, and tie up loose ends. My intentions of smoking is to bring about a greater happiness and joy, as I'm doing that in life. (NC09)
Didn't have a lot of friends or family around that were able to help so I was really struggling, getting things done around the house and taking care of the baby while my husband was at work. So then I finally at one point just wanted to give in, and I made myself a hot bath and had a little bit of marijuana. …It really helped, definitely helped. (NC05)
I feel pretty good, I guess, about it. I feel like it helped me to be able to take care of myself and I really don't think it had a negative effect on my children. (C06)
Short of his fussiness because of his early bedtime, he's really a happy baby. He has a great demeanor, he's just always full of laughs and just a very sweet personality. So seeing that, some of the stuff that I had read said there could be possibilities of like ADD [attention deficit disorder] *or ADHD* [attention deficit/hyperactivity disorder] *possibly down the line. Obviously, it's really hard to tell with an infant, but he focuses really well on things, he really likes to inspect and investigate. I don't know, I just have a feeling he probably won't struggle with ADD. We'll see. (C13)*
Reflecting back I still think it was fine. One thing, although this has nothing to do with it, she was born six weeks early. At first, I'm like what did I do to cause that? (C11)
I smoked with both my pregnancies, they were awful pregnancies and the last one ended horribly. I almost died with that one, my liver ruptured. I was in the hospital for 11 days. I don't know, they say of course it's not what caused it, they don't know what caused it. (C08)
5. Postpartum cannabis use and breastfeeding
I know there's like half-lives, measurements of when THC's in the system. It's just hard because when I first started smoking again and edibles, and I was nursing, of course I was hypervigilant to how my baby's acting if I am nursing him like several hours after I smoke. (NC09)
Probably about a month and a half after I had her, after I was done breastfeeding and all that. Because I just wasn't sure, so I don't know, I just waited. (NC02)
P: So I did it maybe for a couple of weeks and then I switched to formula. *I: And then did you start using cannabis?* *P: I did. (C04)*
So I had to sort of see where [BABY'S NAME] schedule was when he goes to sleep, how long is he sleeping for? Maybe right after I put him to bed, he's asleep for at least four hours, I could take a hit or have half an edible cookie. (NC09)

C, used cannabis during pregnancy; NC, discontinued cannabis after learning of pregnancy; P, participant; I, interviewer.

I smoked just a little bit, just to help the morning sickness…doctors wanted to give me these pills and pills and pills. I'm like man, I'm not taking all of that…not when I can go home and smoke a blunt and be okay. (C14)

Women who quit once they discovered they were pregnant thought that since the research was unclear regarding risks it was better not to take any.

So, because of the uncertainty, because there was nothing definitive at the time, I decided just not to smoke at all…and I'm like, I'm just not going to risk it, period, because we don't know for sure. (NC09)

Many, including those who continued and who quit, discussed the decision with their baby's father, weighing that opinion in their choice.

…my husband, he was totally all for it. He'd rather that than medication. But I don't talk about it a lot….It's kind of a private thing that I just don't share it with everybody. (C08)

Women who continued to use cannabis during pregnancy said it was to treat specific health issues. They noted benefits such as feeling less achy or calmer, and used cannabis primarily to treat morning sickness as well as severe pain and mental health disorder symptoms.

So at that point I was like I don't really care what my midwife says….I wanted just enough, I wanted to smoke maybe one hit to try to get by and see if my food would settle. It did work, actually it was pretty helpful. (C15)

A few were offered medications for morning sickness, and preferred cannabis to pills.

I had the prescribed medication for the nausea and all that, and it wouldn't help me. And when I smoked, it literally instantly goes away. (C10)

Some replaced medications prescribed for mental health symptoms during pregnancy with cannabis, believing it had fewer risks.

I had stopped taking Prozac as soon as I found out I was pregnant. And I was really worried about how the emotional ups and downs of pregnancy would go, without taking medication for it. Because it was really extreme for me, before I was medicated….but it was still pretty intense and that's why I decided to go ahead and try using cannabis to help. (C13)

Some used cannabis to manage severe pain, including pain associated with fibromyalgia.

What I've been told is they're pretty sure low birth weight, possible preterm, so I took that into consideration. But I have a lot of pain during the nights…I just was out of my mind in pain. I needed something, and the only thing the doctors would prescribe me is…Tylenol and that wasn't doing it at all and I needed to sleep. So that was my justification for using when I did. (C06)

One woman in recovery for an opioid use disorder proposed to her care team that cannabis was safer for her than pain medications for post-surgery pain:

I ended up having to get my gallbladder out at 24 weeks. And since I was a recovering addict, not very long recovered at that point, I couldn't use pain medication after the surgery. And I would rather go through the pain than possibly give my mind the idea that it was okay, you know what I mean?…I'm so afraid of ever going back so I just avoid it like the plague. And once again, the doctors were not okay with me using cannabis while I was pregnant…so that was when the doctors are like well, how are you going to do this? You just had surgery, you have to have pain medication. And I finally had to break down and tell them….I smoke cannabis, that's what's going to save me. (C10)

4. Postpartum reflections on cannabis use during pregnancy

After giving birth, women who used cannabis during pregnancy stated they were comfortable with their decision, pointing to their

healthy baby as evidence of a good decision. Nonetheless, some questioned if their use may have caused birth complications or could eventually affect their child.

I think it's okay. I didn't have any problems so I really can't say anything bad. I didn't have any complications with any of my pregnancies. All my kids are perfectly fine and healthy…. (C14)

One woman thought cannabis had a calming effect on the fetus while another thought that cannabis use might have positively affected the temperament of her child.

So I've got one [first child] that's like arghh!—and the other one's [second child] like yah, it's all cool, it's whatever. There's definitely a difference. I would like to think that's because one is the mellow pot baby and one was not a pot baby, but I don't know. (C03)

Although women were generally comfortable with their use of cannabis during pregnancy, some wondered about possible long-term effects on their baby. For example, two were concerned about attention-deficit hyperactive disorder (ADHD).

I smoked the whole pregnancy with him again. I think that's all I used with him was marijuana. I remember always being worried—they say like, you read that if you smoke while you're pregnant, it leads to ADHD and stuff like that in kids, you know? (C10)

Four women who experienced pregnancy complications wondered if their cannabis use was connected.

So I think was like six months pregnant and I had a couple hits and then five-and-a-half weeks before she was born, I went into labor. So I don't know if it had to do with that…(C03)

5. Postpartum cannabis use and breastfeeding

Interviews explored use of postpartum cannabis and while breastfeeding. Most women were unsure how it would affect their breastfed baby and found obtaining information about risks difficult. Decisions were based on personal feelings about whether, when, and how much cannabis use was safe during breastfeeding.

[Regarding information from the Women, Infants, and Children Program] It was just the information they were giving me at the time was very informative as far as taking care of the baby, so when I smoked cannabis, I didn't see a lot of that information in there. So, I was like maybe I should cut back just a little bit. (C14)

Breastfeeding women were mostly concerned about transmitting tetrahydrocannabinol (THC) through breastmilk and questioned how THC might affect their babies.

And of course, there's the smoking and that whole thing where how much does the THC stay in the breast milk? ….I just made the choice to go ahead and use when I know there's also research about that. But it's not enough for me to know what's really happening. (NC01)

Contradictory or nonexistent information on risks of use during breastfeeding made some decide against using cannabis.

Even afterwards, the breastfeeding and smoking marijuana, I was reading both sides of it. It was horrible, it was really good, and like it can be torture to the baby, and it really couldn't be torture to the baby. There was a lot of mixed studies…I was really confused, honestly. (C07)

Some switched to formula instead of breastfeeding and then felt more comfortable using cannabis postpartum.

And then when we made the switch (to bottle feeding), so much of my stress from it dropped away. And then I was like I could probably incorporate [cannabis]… (C13)

Some devised strategies to limit the amount of cannabis in their system during breastfeeding. A few talked about timing cannabis use for when they anticipated their baby would not be feeding.

I wait until midnight and I pump, and then I smoke. And then I sleep and then when she wakes up at four o'clock in the morning, she nurses. Usually I'm tired enough that I don't need to smoke again, but sometimes I'm in a lot of pain, so I smoke again after I nurse her. (C06)

One woman tried to limit THC getting to her baby after she used cannabis, but she was uncertain if her method was effective.

Because that was my main concern, I didn't want the THC to get to my son. I didn't want my baby to be high. But I wanted to be high. And I wanted to make sure that there was a way to block that from him. So, if I spent a night out, I'd pump and dump. I felt like I could do that for marijuana, but I didn't know, because I know marijuana stays in your system a lot longer. (C07)

4. Discussion

We interviewed 15 postpartum women living in a U.S. state with legal non-medical cannabis use, who reported cannabis use before and/or during pregnancy on a clinical cannabis screen to assess beliefs, decision-making, and experiences regarding cannabis use during pregnancy and postpartum. Results amplify themes from prior work and highlight areas for further exploration.

Women made efforts to gather information about cannabis use, relying on online sources and friends and family, as in other studies (Taneja et al., 2022; Vanstone et al., 2022). Consistent with evidence, women hesitated to seek advice from medical providers. Roughly half reported no conversation with their provider about cannabis use during pregnancy and those that did occur were not considered influential. Stigma (e.g., embarrassment, fear of judgment) was a common barrier to discussing cannabis use with their provider (Taneja et al., 2022; Panday et al., 2021; Vanstone et al., 2021). Health-related reasons for cannabis use were based on beliefs that benefits outweighed possible fetal risks, with preexisting and pregnancy-related symptom management the primary driver of use (Ko et al., 2015). Conversely, some women discontinued use when the risk was uncertain or they could not find sufficient evidence of the safety. Some women weighed possible personal and infant health risks in choosing prescribed or over-the-counter medications with known risks against cannabis to manage conditions (e.g., pain, psychiatric symptoms) and generally considered cannabis safer than prescription medications (Jarlenski et al., 2016; Chang et al., 2019; Barbosa-Leiker et al., 2020; Ko et al., 2015; Young-Wolff et al., 2018; Pike et al., 2021).

We identified the key role fathers/partners play in decisions about cannabis use during pregnancy. A recent survey study found continued use during pregnancy associated with partner use (Kaarid et al., 2020). However, this is the first known qualitative study to explore the influence of partner opinions, (Vanstone et al., 2022) which impacted decisions to continue, reduce, or stop use.

Our study explored women's decision-making for using cannabis postpartum, including breastfeeding and lactation. Postpartum, women viewed their cannabis use during pregnancy positively; many pointed to healthy babies as support for their decision. As found previously, women were knowledgeable about THC and worried about breastmilk transmission, (Barbosa-Leiker et al., 2020; Panday et al., 2022) with women attempting to mitigate infant exposure (e.g., pump and dump) or abstaining while breastfeeding.

5. Implications for practice

No unified counseling approach exists for cannabis use in pregnancy due to provider lack of knowledge and confidence, and lack of clear evidence on safety and strategies to mitigate harm. (Holland et al., 2016; Panday et al., 2021; Vanstone et al., 2021) Women should receive cannabis screening and counseling with providers prepared for complex conversations about cannabis use (e.g., women using to to relieve

preexisting or pregnancy-related concerns, orsubstituting for prescribed medications or other substance use). Counseling that reduces potential harms of cannabis use while acknowledging the varied reasons that women may use cannabis during pregnancy and lactation can support evidence-based choices while maintaining patient-provider trust (Vanstone et al., 2021). Without provider-initiated discussions, women seek information elsewhere, including the internet and cannabis dispensary staff (Bartlett et al., 2020). Providers must anticipate the discrimination and legal consequences women may face when disclosing use during pregnancy, even in states with legal cannabis use (Barbosa-Leiker et al., 2020) and be prepared to assess risk factors associated with use during pregnancy (Kaarid et al., 2020; Young-Wolff et al., 2018; Metz and Borgelt, 2018). Last, rigorous research is needed to determine long-term effects of cannabis use during pregnancy, breastfeeding and lactation on child development.

This study has limitations. Participants may have had more positive experiences with cannabis or been different from nonparticipants. This exploratory study was limited to 15 interviews (expanded from 12 to include more women who endorsed use during pregnancy), thus participant views may not fully represent the range of experiences of those who use cannabis during pregnancy. Moreover, sample size restricted exploration of possible differences within key subgroups (e.g., Black vs white participants). A study strength was successful recruitment of a sample with diverse racial and ethnic distributions and educational levels representing the overall patient population. Interviews were conducted approximately 5 years ago. Interviewees had similar access to health and pregnancy services and results may not generalize to women with limited access to health care and insurance, receiving pregnancy care in other settings, or in states without legal cannabis access.

6. Conclusion

Postpartum women make decisions about using cannabis during pregnancy based on online sources, advice from family and friends, and opinions of the father/partner, without guidance from their health care provider. Results highlight the need for providers to become informed about risk and perceived benefits of cannabis use during pregnancy and the need to counsel women about use during preconception, pregnancy and postpartum.

Credit authorship contribution statement

Linda Kiel: Data curation, Formal analysis, Project administration, Writing – original draft, Writing – review & editing. **Clarissa Hsu:** Conceptualization, Data curation, Formal analysis, Writing – review & editing. **Paige D. Wartko:** Data curation, Formal analysis, Writing – review & editing. **Ladia Albertson-Junkans:** Data curation, Writing – review & editing. **John Ewing:** Data curation, Formal analysis, Writing – review & editing. **Gwen T. Lapham:** Funding acquisition, Conceptualization, Data curation, Formal analysis, Writing – review & editing.

Declaration of Competing Interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: This work was supported by funding from Kaiser Permanente Washington Health Research Institute. The sponsors were not involved in the study design; collection analysis and interpretation of the data; the writing of the manuscript; or the decision to submit the manuscript for publication.

Data availability

The data that has been used is confidential.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.pmedr.2022.102075.

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