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Risk Perceptions about Cannabis Use and Receipt of Health-Related Information during Pregnancy

Lara B. McKenzie, PhD, MA, FAAHB^{1,2}, Sarah A. Keim, PhD, MA, MS^{2,3}, Mark A. Klebanoff, MD, MPH^{2,4}

¹Center for Injury Research and Policy, Abigail Wexner Research Institute at Nationwide Children's Hospital, Columbus, OH, USA

²Department of Pediatrics, The Ohio State University College of Medicine, Columbus, OH, USA

³Center for Biobehavioral Health, Abigail Wexner Research Institute at Nationwide Children's Hospital, Columbus, OH, USA

⁴Center for Perinatal Research, Abigail Wexner Research Institute at Nationwide Children's Hospital, Columbus, OH, USA

Abstract

Purpose: To understand risk perception about cannabis use during pregnancy.

Design: Mixed -Methods. Setting: Focus groups. Participants: Mothers.

Method: Focus groups were conducted to learn about person's experiences with pregnancy, health-related behaviors, perception of risky behaviors (cannabis use), and receipt of health-related information during pregnancy. Participants completed the Electronic Health Literacy Scale, the Single Item Literacy Screener, and questions about whether topics were discussed during their prenatal care. Data were coded and analyzed iteratively for emerging themes. Descriptive statistics were used to characterize the sample.

Results: Twenty-one persons (mean age = 34.4, 57% African American, 38% White, 5% Multi-racial) participated in 4 focus groups. One-third of the participants used cannabis; 24% used

Corresponding Author: Lara B. McKenzie, PhD, MA, FAAHB, Center for Injury Research and Policy, Abigail Wexner Research Institute at Nationwide Children's Hospital, 700 Children's Drive, RB3, WB5409, Columbus, Ohio 43205-2664, USA. Lara.McKenzie@Nationwidechildrens.org.

Contribution to authorship

Each author named in the byline qualifies by having participated actively and sufficiently in the study reported. Each author made substantial contributions to: (a) the concept and design or analysis and interpretation of data (LBM, SAK, MAK); and (b) drafting of the manuscript and revising it critically for important intellectual content (LBM, SAK, MAK). Each author approved the submitted version of the manuscript (LBM, SAK, MAK). All authors accept responsibility for the paper as published (LBM, SAK, MAK). The corresponding author (LBM) confirms that all bylined authors fulfilled all conditions described here.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Ethics approval

The Perinatal Research Repository (IRB10-00035, Continuing review 19 Sept 2019, initial approval 5 March 2010), The LEAF Study (IRB16-00359, Continuing Review 23 April 2019, initially approved 7 Jun 2016), and the Shape Study were all reviewed by the Institutional Review Board of Nationwide Children's Hospital, and women completed separate, written, informed consent for each study.

Supplemental Material

Supplemental material for this article is available online.

alcohol; and 48% used tobacco during pregnancy. Participant's perceptions and use of cannabis during pregnancy were shaped by relief from pregnancy-related symptoms, recommendations from health care providers that cannabis is safe, anecdotal stories from friends and family, fear associated with prescription medications, and preference for "natural" remedies. The context of distrust of providers permeated these themes. The sample displayed poor e-health literacy compared to other adult samples.

Conclusion: Inter-related factors that influence cannabis use among persons who are pregnant should be considered when establishing trust between patients and providers, creating messages for patients about cannabis use during pregnancy, and when implementing interventions to improve provider-patient communication about health risk behaviors.

Keywords

cannabis; pregnancy; risky behaviors; mothers; attitudes and beliefs; health care providers; health information

Purpose

Cannabis is the most commonly used recreational drug during pregnancy in the US.¹ Use has increased recently²; and currently, 3.9% of persons who are pregnant report use in the prior month³; however, these are likely underestimates of cannabis use.⁴ Within the context of universal urine screening, most persons with positive screens did not report their use in a clinical setting.⁵ Persons who are pregnant report using cannabis to treat nausea and appetite changes,⁶ improve mood,⁷ alleviate anxiety or depression, and relieve pain.⁸ Of note, only 39% reported "recreation" as the primary indication for use.⁹

Significant risks of pregnancy cannabis use have been documented. In particular, prenatal exposure has been associated with specific neurocognitive deficits in the offspring.¹⁰ It has also been associated with adverse pregnancy outcomes including preterm birth and reduced birth weight, but this literature is inconsistent.¹¹⁻¹³ Lack of adequate control for co-use of other substances like tobacco and exposure measurement methods that misclassify some persons as non-users are perennial limitations of many studies in this field.^{14,15} National guidelines from the American College of Obstetricians and Gynecologists (ACOG) strongly recommend that clinicians screen for and advise against cannabis use in pregnancy.¹ Despite evidence for adverse effects, beliefs about cannabis and its risks vary among US adults. In a recent study by Keyhani et al,⁴ 91% of US adults believed cannabis had at least one risk, whereas 9% believed it had no risks. The most common risk cited was legal problems (51.8%), followed by addiction (50%), and impaired memory (42%). Approximately 7% believed cannabis is *somewhat* or *completely safe* during pregnancy.⁴ In a recent study by Chang et al, persons who are pregnant who reported cannabis use had mixed feelings and varying levels of concern about the risks of cannabis use and indicated frustration about the limited available information about the consequences of cannabis use on child development.⁷

Among what has been documented about contemporary attitudes and knowledge regarding cannabis among persons who are pregnant, cannabis use has not been explored in depth

within the cultural context in which decisions about use occur.⁷ Nevertheless, obstetricians and other health care providers and practitioners are expected to counsel about cannabis, with little guidance for which approaches are most effective and well-received by patients. Given these gaps and changing use patterns among persons who are pregnant, the research question being examined in the current study was what are the risk perceptions among African American and White mothers of young children with diverse cannabis use histories? To evaluate this question, we characterized their perceptions of the risks and benefits of cannabis use during pregnancy and the cultural contexts for cannabis use.

Approach

Setting

The current study was part of the Lifestyle and Early Achievement in Families (LEAF) Study,¹⁶ which is examining associations between events and practices during pregnancy, including cannabis use, and the development of executive function and aggressive behavior in the offspring at 3.5-7 years of age.

Participants

The sample for the present study came from among those enrolled in the LEAF Study. These participants were recruited during pregnancy into the Perinatal Research Repository (PRR), which began in 2010 and is ongoing. The PRR, a general-purpose data and specimen repository, recruited persons receiving antenatal care from several clinics at The Ohio State University Wexner Medical Center (OSUWMC), a large academic medical center in Columbus, Ohio. PRR inclusion criteria were age 16-50 years, ability to communicate in English, and intent to deliver at OSUWMC. Persons who consented completed an intake questionnaire covering a wide variety of medical, demographic and socioeconomic domains; the questionnaire included items on use of tobacco, cannabis, and other drugs of abuse to date during the current pregnancy and experiences with homelessness and physical abuse. Participants provided urine at enrollment and then in each trimester for unspecified future use, and these were stored at -80°C . At the conclusion of the pregnancy, the obstetrical record was abstracted to a pre-coded form by an obstetrical research nurse; the form included items about clinically-noted use of various illicit drugs, including cannabis. The PRR consent included an option to allow re-contact for participation in future IRB-approved research, and approximately 75% of enrolled persons agreed to this aspect.

For the LEAF Study, attempts were made to recruit all persons in the PRR who allowed future contact, whose children was 42-95 months old during the anticipated course of the LEAF Study (birth dates from 2010 to early 2016) and were not known to have died. Exclusion criteria were: the child was a ward of the State throughout the enrollment period, and the child had cognitive or physical impairment to a degree precluding participation in any study task. The LEAF Study consisted of in-person study visits involving primarily cognitive and behavioral assessments of the children. The protocol for the LEAF Study has been previously published.¹¹

Focus groups were added to the LEAF Study in 2018 to learn about contemporary practices and attitudes toward cannabis use and other health risk behaviors in pregnancy. A roster was assembled of persons who had participated in at least one in-person visit for the LEAF Study. Study staff sent postal invitations and made telephone calls to potential focus group participants until each of 4 groups had approximately 12 participants scheduled to attend. Focus group size was determined based on best practice recommendations from leading experts in qualitative research^{17,18} and was also informed by the moderator's years of practical experience. The average length of the focus groups was 1.5 hours including sign-in/arrival procedures, consent, warm-up exercises, discussion, and wrap-up. The study was approved by the Institutional Review Board at Nationwide Children's Hospital. All persons who agreed to participate in the focus groups provided their informed, written consent.

Method

A mixed-methods approach was used. The type of qualitative design and quantitative design were descriptive. Potential participants received a letter and phone calls inviting them to participate in a 60-minute in-person focus group. Participants were informed they would be part of a small group who had been pregnant in the past and would meet to discuss sources of information they relied on for healthcare information during pregnancy and what it was like to be pregnant. The 4 groups were defined by self-identified race (African American or Multi-racial and White) and cannabis use during the index pregnancy (determined during pregnancy from self-report, record abstraction and/or positive urine assay on universal screening for 11-nor-9-carboxy-⁹-tetrahydrocannabinol (THCCOOH)). The groups were structured in this fashion to facilitate open discussion about potentially shared values, norms and beliefs, some of which would be related to potentially stigmatizing behaviors. Two female professional focus group moderators, one African American and one White, moderated two groups each.

A focus group discussion guide was developed specifically for the current study by the co-authors in consultation with focus group moderation experts. The themes explored were based on questions raised in the LEAF Study results.

While in the waiting room, participants completed a questionnaire that covered whether particular behaviors were discussed during antenatal care of their most recent pregnancy (foods, exercise, substance use, breastfeeding, seat belts, medicines), and for each behavior, whether this advice was considered not, somewhat, or very useful. It also asked the woman's perceptions of how well she was treated by medical professionals during her pregnancy. Mothers were asked whether a doctor, nurse, or other health care worker talked with them about eight topics during their most recent pregnancy and whether they found that information useful (note: the most recent pregnancy was not necessarily with the child enrolled in the LEAF Study. The topics included: foods that are good to eat, exercise, smoking, alcohol, seat belts, medicines that are safe to take, and illicit drug use; and breastfeeding. eHealth literacy was assessed using the Electronic Health Literacy Scale (eHEALS)¹⁹ which captures the perceived ability to find, evaluate and use health related information in electronic environments, and the Single Item Literacy Screener (SILS),²⁰ which assesses how often a person needs help when they read written material from their

doctor or pharmacy.²¹ Prior studies have demonstrated that eHEALS is a reliable and valid tool to assess eHealth literacy.²² The SILS performs moderately well at identifying limited reading ability in adults and the diagnostic accuracy to identify limited reading ability, one component of health literacy, has been established. The questionnaire also asked whether written help was needed when accessing online health information and preferences for sources of health information and types of media for receipt of health information. During the discussions, participants completed a brief written exercise about their perception of the riskiness of certain ingestions during pregnancy (eg, home remedies, herbal remedies, coffee, tea, junk food, cigarettes, alcohol, cannabis, over-the-counter medications, other drugs) to facilitate discussion. Moderators led groups through focused conversation, using a discussion guide (Supplemental File) developed to ensure salient questions and probes were discussed. The researchers observed the discussions via one-way mirror. At the conclusion, participants received \$100 to thank them. Participants who arrived on time were entered into a drawing for an additional \$25. Discussions were audio-taped, transcribed by a professional Health Insurance Portability and Accountability Act (HIPAA)-compliant service, and were proof-read for accuracy by the researchers and moderators. Transcribed discussions were analyzed for patterns and themes. Quotes from participants are presented as they were transcribed.

Analysis

Descriptive statistics summarized participant characteristics and survey responses. Transcripts were created from audio recordings. Transcripts from each group were reviewed by the moderators and authors. The thematic analysis (extraction of themes from text by analyzing the word and sentence structure) was done manually by the first author, with confirmation by co-authors. This process for conducting thematic analysis in this manner is a process recommended by Braun and Clarke.²¹ Manual coding, which is popular due to its perceived high accuracy, was used to find significant themes. Similar and dissimilar responses were grouped, unique or different comments were noted, and patterns addressing key questions of interest were summarized to extract important themes and subthemes. Labeling and organizing was done to identify different themes and relationships. Labels were assigned to the text words and phrases that represented important and recurring themes in each response. Verbatim responses to focus group guide questions, combined with survey and exercises were reviewed and considered together for deeper insights. The central themes and subthemes derived from the discussion results are presented. The authors considered the extracted themes to be trustworthy and reliable due to the following steps undertaken by the research team. Firstly, the lead author conducted the thematic analysis. Secondly, the third-party research experts who moderated the focus groups provided their own independent review of key themes. After both sets of thematic analyses were complete, the lead author and co-authors debated, revised, and ultimately confirmed each of the extracted themes included in this article. Saturation was considered when designing the research study, guiding the group stratification decisions (eg, by respondent ethnicity and cannabis use). Budgetary constraints precluded the confirmation of saturation achievement. However, by the time the fourth focus group was concluded, few novel themes were observed or extracted from the discussion.

Results

Twenty-one mothers participated. At the time of the groups, mothers had a mean age of 34.4 (SD 5.6) years and reported their race as African American (57%), White (38%), or Multi-racial (5%) (Table 1). Mothers delivered at an average gestation of 38 weeks + 1-day (standard deviation = 15 days) and the mean birthweight was 3070 (standard deviation = 589) grams. Small group sizes precluded formal statistical testing of differences in participant characteristics across groups. When mothers were originally recruited into the PRR, substance use during that index pregnancy was reported as follows: 48% of persons smoked tobacco and 24% drank alcohol (Table 2). Based on the three-part cannabis use during pregnancy variable, 33% used cannabis.

Multiple and inter-related themes were found to shape participant's perceptions of cannabis use during pregnancy; namely, the relief from pregnancy-related symptoms, recommendations from health care providers that cannabis is safe, anecdotal stories from friends and family, fear associated with prescription medications, and preference for "natural" remedies. The context of distrust of providers and their recommendations permeated these themes. Three central themes emerged, these were: (1) Beliefs about cannabis use during pregnancy; (2) Receiving and trusting health-related information during pregnancy; and (3) Inconsistent information received from providers about cannabis use during pregnancy. The views expressed were similar across the groups, except that African American persons reported more distrust of health care providers than did White persons. Themes with illustrative quotes are discussed. Themes, subthemes, and supporting quotes from the discussions are listed in quotations.

Beliefs about cannabis use during pregnancy.

Participants reported that cannabis use was common in their communities. Reasons for use included physical benefits, desire to use cannabis (pleasure), or to relieve pregnancy-related symptoms. During the group exercise on risky behaviors during pregnancy, participants said cannabis use was risky during pregnancy, at first, for primarily legal reasons. As discussions continued, many mothers amended their initial reporting and stated that cannabis is not harmful to the fetus, or at least, less risky than they have been told. Another participant added,

"To me, the difference is, marijuana is not manmade. It's not a chemical like other drugs. You know, it's not like heroin, or coke, that's all made out of chemicals versus marijuana is a plant"—Non-user.

A mother in another group stated,

"[Marijuana] is not risky because it's herbal...they wouldn't have legalized it, and they wouldn't have dispensaries. And I don't think it's risky at all"—User.

Many believed cannabis to be equally or less risky to the health of persons who are pregnant than prescriptions, because it

"doesn't come with the withdrawal"—Non-user.

like other illicit drugs. One participant noted,

“I don’t think [marijuana] is risky at all. I haven’t had a single issue”—User.

Some noted that they considered cannabis use risky only because of potential legal issues. One participant described stopping cannabis use just prior to delivery,

“When I was pregnant with my son I smoked. And I did not lie to my doctor. But as a mother, and to be responsible, when it was time for my son to get here, I wasn’t going to let him go into any system, so I quit”—Non-User.

Participants cited that the basis for their beliefs was either their own experiences or those of friends or family that indicated that adverse outcomes were not a result of risky behaviors during pregnancy, eg,

“I went to high school with a girl and we were kind of pregnant around the same age, and she smoked marijuana her whole pregnancy. And I mean, her baby was fine”—Non-User.

Another mother added,

“I smoked before and that’s why I’m saying, and I know so many people that’s smoking for so many years, and I’ve never heard of any birth defect. I’ve never heard of something being wrong with the child because their parents smoked”—User.

Only one participant gave an example of adverse consequences supported by an anecdote,

“I have a nephew that I think is slower and has a delay because his mom literally smoked blunt after blunt after blunt for her entire pregnancy. And you can tell that he’s not all there, but to her, he’s normal and there’s no telling her”—User.

However, this example was cited as an anomaly. Most participants stated or endorsed the belief that because cannabis is “natural,” it is less risky than prescribed (manufactured) medications. Many expressed fears of harm to fetus and general confusion around taking *any* prescribed medications,

“any prescription that you get when you’re pregnant—I think the medicines they prescribe you are way worse than some kind of home remedy”—User

—said one woman who suffered migraine headaches during pregnancy.

Receiving and trusting health-related information during pregnancy.

Participants reported receiving a lot of information about both risky and healthy behaviors. Most received information from their health care providers (doctors, nurses, and midwives), brochures, nursing hotlines, and Google. Most felt that their medical professionals (health care providers, nurses, midwives, Women Infants and Children program) were supportive when they communicated risk and health behavior information, nurses and midwives, more so than physicians. However, some believed they were treated less well by health care providers because of their race or ethnicity,

“They’re ready for the next person to be in the bed. They just—you don’t feel like you’re an important person”—User

—or insurance type or status,

“I think insurance too plays a big—insurance plays a big role in how they treat you”—User.

Some participants openly distrusted health care providers and were doubtful of the accuracy of the health information they shared,

“doctors use Google, not sure what doctor’s role is because patients can just Google it themselves.”—User.

This distrust was more commonly reported among African American mothers,

“It’s just the same thing as the—they telling you what you can and can’t do, it’s like they’re reading off a script. You know what I mean?”—User.

Friends, family, and the Internet were nominated as trusted sources of information (as much, or more) than medical professionals among all mothers.

Inconsistent information was received from providers about cannabis use during pregnancy.

Mothers shared that their health care provider had encouraged cannabis use to alleviate negative pregnancy symptoms (nausea, lack of appetite, or lack of sleep). Some reported that their health care providers “looked the other way” when cannabis use was discussed or did not firmly discourage use,

“I wasn’t going to stop. My doctor even told me, I have to tell you that you shouldn’t do it because it’s illegal, but we have never found anything wrong with any babies that were born with marijuana”—Non-User.

Another mother said,

“And the doctor, he didn’t tell her to keep going, but he just kind of looked the other way and she just made sure she stopped [before delivery]”—User.

The following sections summarize the data collected from the full sample of mothers at the focus groups but were not specified in the discussion guide (see Supplemental File). These data were aggregated from all participants and are descriptively summarized here.

Health Literacy.

The mean eHEALS score was 23.2 (SD = 4.9), which reflected generally poor knowledge, comfort, and perceived skills at finding, evaluating, and applying electronic health information to health problems. Despite the low mean score, participants reported never (41%; n = 9) or rarely (50%; n = 11) needing to have someone help them when they read instructions, pamphlets, or other written material from their doctor or pharmacy. Only two participants (9%) were considered “positive,” indicating some difficulty with reading printed health material.

Preference for health information and health media.

When selecting two preferred out of 12 possible sources of health information for themselves and their families (TV, Newspapers, Books, Magazines, Internet, Radio, Friends and family, People at work, Doctors or other health providers, Health organizations like the Red Cross, Brochures, Other), most endorsed doctors or other health providers (n = 16, 76%) and the Internet (n = 12, 57%). When selecting two preferred out of 12 possible sources of newer media tools for getting information for themselves and their families, (social networking site such as Facebook, video chat, such as Skype, shared videos online (uploaded your own or forwarded videos you find to others), RSS feed (such as Yahoo News), blog, online forum or discussion group, email, Twitter, text messages, app on a smartphone, Other, None of these), many endorsed social networking sites such as Facebook (n = 9, 42.8%) and online forums or discussion groups (n = 7, 33%).

Perception of treatment and respect shown by medical professionals.

Mothers were asked to report how they felt the doctors, nurses, or midwives treated them (on a 3-point scale from “Not at all”, “Somewhat,” to a “A great deal”). Five items assessed whether doctors, nurses, or midwives treated mothers (1) politely and with respect (n = 18, 86%-a great deal); (2) spent enough time with them at the visits (n = 17, 81%-a great deal); (3) were open to questions (n = 17, 81%-a great deal); (4) as if they cared about them (n = 16, 76%-a great deal); and (5) if mothers had confidence that their doctors, nurses, or midwives were qualified (n = 18, 86%-a great deal).

Advice provided by medical professionals and whether moms found this useful.

Mothers endorsed that they remembered their doctor, nurse, or health care worker talking to them about foods (n = 19, 90%); exercising (n = 16, 76%); smoking (n = 19, 90%); breastfeeding (n = 21, 100%); alcohol (n = 20, 95%), seat belts (n = 13, 62%); medicines (n = 20, 95%); and illegal drugs (n = 17, 81%). Most mothers rated information on food, exercise, breastfeeding, alcohol, seat belts, medicines, and illegal drugs as *somewhat useful* or *very useful*. Information on smoking was rated as *not useful* n = 2, 10.5%; *somewhat useful* n = 2, 10.5%; and *very useful* n = 15 (79%).

Discussion

These findings add depth to the growing body of literature on maternal perceptions of risk and attitudes towards use of cannabis during pregnancy, eHealth literacy, preference for health information and health media, perceived treatment and usefulness of advice from medical professionals provided to pregnant mothers, and perceived riskiness of practices and substances used during pregnancy. In summary, many mothers in this study did not believe that cannabis use during pregnancy is risky to them or their fetus; in fact, the use of remedies perceived as “natural” were often preferred. Mothers expressed strong concern about the riskiness and dangers of medications prescribed for use during pregnancy. Generally, health care providers were perceived as caring and able to provide useful information about health issues and pregnancy. The participants in our sample had lower ehealth literacy than has been found in previously reported samples.

Cannabis use during pregnancy is perceived as low risk.

Participants believed that cannabis was less risky for persons who are pregnant than some prescription medications. A study by JC Chang et al⁷ identified a similar finding among persons who are pregnant that reported cannabis use, that is, among a sample of 25 persons who were pregnant, cannabis was described as “natural” and “safe” compared to alcohol and other drugs (including prescribed medications). These findings are concerning given the growing literature about the adverse effects of cannabis use during pregnancy on birth outcomes like preterm birth and birth weight, as well as a long-standing and consistent literature pointing to cognitive and behavioral deficits among children exposed prenatally, particularly in aspects of executive function. For instance, several recent meta-analyses have suggested that cannabis use results in earlier deliveries and smaller babies, although this literature is not completely consistent.^{12–16} Several landmark cohort studies^{23,24} have repeatedly reported poorer attentional ability, working memory, and visuo-spatial skills among exposed children. Given recent statements recommending no cannabis use during pregnancy, there is an opportunity to develop public health messaging and health care provider counseling to address mothers’ perceptions. Further, the reluctance to use prescribed medications during pregnancy affords another opportunity for awareness and education among persons who are pregnant.

Poorer eHealth literacy than previously reported samples.

The average eHEALS score for participants in our focus groups (mean eHEALS = 23.2, SD = 4.9) reflected poorer eHealth literacy than several previously reported samples, including older adults in a US online bone health study (mean eHEALS = 30.9, SD = 6)²⁵, a sample of Dutch adults with rheumatic disease (mean eHEALS = 26.7, SD = 5.9), and a sample of the general Dutch population (mean eHEALS = 27.6, SD = 5.9).²⁰ Only a small percentage (9%) of our sample had limited reading ability per SILS; previously reported studies with samples of nearly 1000 older adults with chronic disease reported 17% with limited reading ability.²⁶ Given that the eHEALS scores for our sample showed poorer eHealth literacy than several other studies, the SILS results may be demonstrating a “false negative” because our participants may not recognize that they need help with reading, may not understand the question, or may feel ashamed that they need help with reading.²⁷

Strengths of the current study include diversity of the sample which included both cannabis users and non-users. The focus group design allowed for in-depth perspectives and insights into person’s decisions regarding cannabis to be gathered. Limitations of this study include the sample size, which is common to qualitative and mixed methods research. Also, the results are not necessarily generalizable to other persons who used or who did not use cannabis during pregnancy. Of note, cannabis was not legal in Ohio during the time of the study. There seemed to be a stark contrast between the pre-focus group survey responses which indicated confidence and positivity in health care providers and the information they provide, vs the discussion in the groups which conveyed feelings of distrust in health care providers. This contrast seems difficult to reconcile; however, participants may have felt comfortable sharing real feelings in the group discussions.

Conclusion

This study presents insight into the inter-related factors that influence cannabis use among persons who are pregnant. These factors should be considered when: establishing trust between patients and providers, creating messages for patients about cannabis use during pregnancy, the consequences for persons and developing fetuses; and when implementing interventions to improve provider-patient communication about health risk behaviors. Lack of counseling or not being told directly to forego cannabis during pregnancy may be perceived by persons as meaning use is not risky (or that adverse outcomes are not significant). Health care providers should: (1) seek opportunities to build trust and open communication with patients; (2) ask about prenatal cannabis use; (3) provide support on what medications (over-the-counter and prescription) are safe or not safe (and why) to take; (4) provide support on why cannabis is not safe for the mother and the fetus and explicitly describe what is at stake developmentally for their child; (5) counsel on what remedies (home, natural, over-the-counter, and prescription) are safe during pregnancy for relief of pregnancy-related symptoms (such as, lack of sleep, food aversions, weight loss due to loss of appetite or vomiting, etc.); (6) counsel on how cannabis currently available is potent, contains toxins, chemicals, etc. despite perception that it grows “naturally.” In addition, health care providers may want to avoid messages that are overly punitive, as some persons who are using cannabis may avoid seeking prenatal care (which puts mother and baby’s health at risk) because they fear arrest or other legal consequences (their infant or other children being removed from their care). Importantly, health care providers should connect persons who smoke or misuse substances with effective resources in pregnancy to curtail use. Future research is needed to develop interventions to educate providers and patients on prenatal cannabis exposure and adverse outcomes.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Abbreviations

LEAF	Lifestyle and Early Achievement in Families
eHEALS	Electronic Health Literacy Scale

SILS	Single Item Literacy Screener
US	United States

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“SO WHAT?”**• WHAT IS ALREADY KNOWN ON THIS TOPIC?**

Despite statements and warnings about the dangerous effects of cannabis use during pregnancy, persons who are pregnant use cannabis more than any other illicit drug.

• WHAT DOES THIS ARTICLE ADD?

Multiple and inter-related themes were found to shape women’s perceptions and use of cannabis during pregnancy; namely, the relief from pregnancy-related symptoms, recommendations from health care providers that cannabis is safe, anecdotal stories from friends and family, fear associated with prescription medications, and preference for “natural” remedies.

• WHAT ARE THE IMPLICATIONS FOR HEALTH PROMOTION PRACTICE OR RESEARCH?

Findings highlight the lack of awareness of the risks of cannabis use during pregnancy, the influence of friends, family and the internet, the distrust of health care providers and prescription or non-natural remedies. These results can inform recommendations for how health care providers address prenatal cannabis use with their patients.

Table 1.

Demographic Characteristics of Focus Group Participants.

Characteristic	Total N = 21 N (%)	Group 1 AA Non-users	Group 2 white users	Group 3 AA Users	Group 4 white non-users
Race/Ethnicity					
Black	12 (57%)	6 (100%)		6 (100%)	
White	8 (38%)		2 (100%)		6 (86%)
Multi-racial	1 (5%)				1 (14%)
Age (years) at time of focus group					
25-29	7 (33%)	4 (67%)	1 (50%)	0	2 (29%)
30-34	4 (19%)	1 (17%)	0	1 (17%)	2 (29%)
35-39	6 (29%)	1 (17%)	0	3 (50%)	2 (29%)
40-44	4 (19%)	0	1 (50%)	2 (33%)	1 (29%)
Current age, mean (SD)	34.4 (5.6)	30.9 (4.0)	34.4 (8.9)	38.4 (2.0)	33.8 (5.9)
Age at index pregnancy (years)					
Mean (SD)	27.3 (5.4)	23.8 (5.0)	26.5 (7.8)	30.8 (3.4)	27.6 (5.7)
Highest education level ^a					
<high school	5 (24%)	1 (17%)	1 (50%)	1 (17%)	2 (29%)
High school graduate	6 (29%)	2 (33%)	1 (50%)	1 (17%)	2 (29%)
Some college	6 (29%)	2 (33%)	0	3 (50%)	1 (14%)
Completed college or higher	1 (5%)	0	0	0	1 (14%)
Missing	3 (14%)	1 (17%)	0	1 (17%)	1 (14%)
Household income ^a					
<\$10,000	9 (43%)	3 (50%)	1 (50%)	4 (67%)	2 (29%)
\$10,000-19,999	4 (19%)	1 (17%)	0	0	2 (29%)
\$20,000-29,999	3 (14%)	1 (17%)	0	0	2 (29%)
Refused	2 (10%)	0	1 (50%)	1 (17%)	0
Missing	3 (14%)	1 (17%)	0	1 (17%)	1 (14%)
Marital status ^a					
Never married	11 (52%)	5 (83%)	1 (50%)	4 (67%)	1 (14%)
Married	3 (14%)	0	0	0	4 (43%)
Divorced/widowed	3 (14%)	0	0	1 (17%)	2 (29%)

Characteristic	Total N = 21 N (%)	Group 1 AA Non-users	Group 2 white users	Group 3 AA Users	Group 4 white non-users
Missing	4 (19%)	1 (17%)	1 (50%)	1 (17%)	1 (14%)
Planned pregnancy ^a					
Yes	12 (57%)	1 (17%)	1 (50%)	1 (17%)	3 (43%)
No	6 (29%)	4 (67%)	1 (50%)	4 (67%)	3 (43%)
Missing	3 (14%)	1 (17%)	0	1 (17%)	1 (14%)
Homeless ^a					
Yes	1 (5%)	0	0	1 (17%)	0
No	17 (81%)	5 (83%)	2 (100%)	4 (67%)	6 (86%)
Missing	3 (14%)	1 (17%)	0	1 (17%)	1 (14%)
Physical abuse within past year ^a					
Yes	1 (5%)	0	0	0	1 (14%)
No	17 (81%)	5 (83%)	2 (100%)	5 (83%)	5 (71%)
Missing	3 (14%)	1 (17%)	0	1 (17%)	1 (14%)
Index pregnancy duration ^a (weeks, days; from obstetric record)					
Mean (Standard Deviation)	38.1 (15 days)	38.4 (5.3)	41.1 (3.5)	36.2 (17.6)	38.2 (12.2)
Median (25 th , 75 th percentile)	38.2 (37.2; 39.2)	38.3 (38.1, 39.2)	41.1 (41.5, 41.3)	37.1 (33.6, 37.2)	38.6 (37.2, 38.7)
Index pregnancy birthweight ^a (grams, from obstetric record)					
Mean (Standard Deviation)	3070 (589)	3145 (131)	3853 (280)	2845 (899)	2974 (431)
Median (25 th , 75 th percentile)	3016 (2820, 3250)	3181 (3138, 3230)	3853 (3755, 4051)	2680 (2230, 3648)	2910 (2776, 3016)

^aVariable measured during index pregnancy.

Table 2. Substance Use Prevalence during the Index Pregnancy among Focus Group Participants.

Smoked tobacco during index pregnancy (self-report) ^a	
Yes	10 (48%)
No	11 (52%)
Used marijuana during index pregnancy (self-report, obstetrical record and/or urine toxicology) ^a	
Yes	7 (33%)
No	14 (67%)
Used alcohol during index pregnancy (self-report) ^a	
Yes	5 (24%)
No	16 (76%)

^aVariable measured during index pregnancy.