

Medical Provider Perceptions of Breastfeeding Women Who Use Recreational Marijuana

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ABSTRACT

Medical Provider Perceptions of Breastfeeding Women Who Use Recreational Marijuana

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Objective:

To examine medical provider perceptions of breastfeeding women who use recreational marijuana and identify common themes in provider responses.

Design:

Qualitative research study utilizing a semi-structured interview guide.

Setting:

Providers who participated were recruited and their responses to the semi-structured interview guide were collected in the Puget Sound area of Washington State between April and June of 2016.

Participants:

Participants were medical providers who work with pregnant or breastfeeding women and their children; participants included family practice physicians, pediatricians, obstetricians, midwives, and lactation professionals.

Data Analysis:

The participants' written responses were carefully reviewed and similar words and phrases were coded and grouped into specific categories. Common themes within the participant responses emerged from these categories.

Results:

From analysis of participant responses, three major themes emerged from eight broader themes. The eight broad themes included: provider thoughts on the benefits of breastfeeding for mother and child, medical marijuana use, parents' disclosure of marijuana use, risks to infants, benefits of breastfeeding versus risk, social service involvement, specific concerns about maternal recreational marijuana use, and provider access to professional education. The three major themes that emerged from the broader themes are: providers strongly agree breastfeeding is important for maternal and child health and bonding, providers have concerns about the health and safety of children whose mothers are using recreational marijuana while breastfeeding, especially brain growth and development, and providers expressed concerns about the lack of solid research on marijuana use and breastfeeding.

Conclusion:

Most participants agree that the benefits of breastfeeding may outweigh the potential risks of light maternal recreational marijuana use. However, nearly all participants discourage marijuana use during breastfeeding due to lack of research about the effects of use on children. Participants' responses clearly show that more research regarding maternal marijuana use while breastfeeding is necessary to appropriately counsel parents on risks.

INTRODUCTION

The legalization of recreational marijuana in some states within the United States has highlighted concerns regarding recreational marijuana use in pregnant and breastfeeding mothers. The consensus among health care providers is that all drugs, licit and illicit, should be used with caution by pregnant women and only under the supervision of the mother's health care provider. However, medications/drugs are metabolized differently during breastfeeding than in pregnancy.^{1,2} Several studies show long-term effects on children when their mothers used marijuana heavily during pregnancy, but studies attempting to link marijuana use during breastfeeding with long-term effects on children have shown mixed results.^{3,4} The risks of not breastfeeding are significant.^{5,6} Breastfeeding is the biologically normal way of feeding infants and the decision to wean from the breast should be made carefully.

Lack of exclusive breastfeeding for the first six months after birth is responsible for the deaths of an estimated 700-900 infants per year in the United States.^{5,6} The cost of suboptimal breastfeeding totaled approximately \$18.5 billion dollars in 2014.⁶ This figure represents costs for both mothers and children, and includes medical, non-medical, and premature death costs.⁶ In 2012, The American Academy of Pediatrics revised their policy statement on breastfeeding and the use of human milk to emphasize breastfeeding is not a lifestyle choice but rather a public health issue.⁵ The risks of not breastfeeding include increased risk of hospitalization of infants for lower respiratory infections, increased risk of otitis media, gastrointestinal infection, allergic disease, and sudden infant death syndrome.⁵ In addition, infants who are not breastfed are more likely to develop pneumonia. The protection conferred by breastfeeding against pneumonia appears to be dose-related with infants exclusively breastfed for four months having a fourfold increase risk of pneumonia compared to infants exclusively breastfed for at least six months.⁵ Table 1 lists conditions affected by breastfeeding duration and the level of protection conferred.

Breastfeeding is also critically important to the health of women. The medical costs of suboptimal breastfeeding are approximately \$3.0 billion dollars, 79% of which can be attributed to women due to myocardial infarction, breast cancer, and diabetes.⁶ Breastfeeding after delivery decreases postpartum bleeding in many women and can facilitate rapid involution of the uterus.⁵ Lack of breastfeeding or early weaning from the breast has been shown in prospective cohort studies to increase anxiety or postpartum depression in some women.^{5,6,7,8,9} Child abuse and neglect are 2.6 times more likely for mothers who did not breastfeed when compared to those who did, even after controlling for potential confounders.^{5,10}

Maternal Use of Drugs and Breastfeeding

Maternal use of medications or drugs during pregnancy and lactation is a subject of concern for both mothers and health care providers. The benefits of drug therapy to treat illness or provide pain relief must be weighed against the risk of transmission of the drug to the developing fetus during pregnancy or to the child during breastfeeding. When administering a drug to a lactating mother, the many benefits of breastfeeding should be considered.^{1,11} The transmission of licit or illicit drugs from mother to child through breastmilk is complex, but well documented. Route of administration of a drug (oral, intravenous, etc.), absorption rate, and the drug's half-life will affect the amount of transmission of a drug into breastmilk.^{1,2,11} Also important is how drugs pass into breastmilk on a molecular level. Knowledge of a drug's molecular weight, pH, solubility (fat versus water), and protein binding is crucial to determine the potential risk of drug transmission, as is the oral bioavailability of the drug when ingested by the child.^{1,2,11} The lower the oral bioavailability of a drug, the less likely the drug is to be absorbed in the gut of the breastfeeding child. The age of the breastfeeding child is another factor to consider when determining the safety of a drug for use in breastfeeding.^{2,11} In the first

few days after birth, the amount of drug that passes through to the colostrum, or first milk, is greater than the amount passed after the third post-partum day when mature milk appears. After birth, widened intercellular gaps in the mother's milk producing glands allow larger-sized molecules to transfer more readily into colostrum.^{2,11} These gaps narrow as mature milk synthesis begins. In addition, as a baby grows, the less likely a drug will negatively affect the breastfeeding child. Nursing toddlers and older children are not as likely as newborns to be affected by a drug due to the child's size and more mature metabolism, and as the increased intake of complementary foods begins to replace feedings at the breast.²

Few drugs are absolutely contraindicated in breastfeeding mothers. For healthy newborns, approximately 90% of drugs will be acceptable for use by their mothers during breastfeeding.¹¹ The relative infant dose (RID) is a formula that standardizes the dose of a drug by the weight of the mother and infant. See formula below:^{2,11}

$$\text{RID} = \frac{\text{Dose.Infant (mg/kg/d)}}{\text{Dose.Mother (mg/kg/d)}}$$

The "Dose.Infant" figure is determined by multiplying the concentration of a drug in the mother's milk by the volume of milk the infant has consumed per day (roughly 150mL/kg). An RID of less than 10% is considered acceptable, greater than 25% may produce a "therapeutic effect" on the infant if the drug is orally bioavailable. About 3% of drugs have a relative infant dose greater than 25%. However, not all drugs with an RID greater than 25% would be contraindicated in breastfeeding. Again, if the drug is not readily orally bioavailable to the infant, the risk of a drug affecting a breastfeeding child is reduced.^{2,11}

Marijuana Use and Lactation

Cannabis sativa is commonly known as marijuana, cannabis, or weed. There are two additional strains of cannabis: *Cannabis indica* and *Cannabis ruderalis*. The different strains, including hybrids of these strains, will produce varying levels of delta9-tetrahydrocannabinol (THC) and other cannabinoids (CBD) in the leaves or buds.^{12,13,14} Hashish, bhang, and ganja are names of cannabis products prepared from the plant itself. Marijuana is considered a drug of abuse in some countries, but many countries consider marijuana a recreational drug and harmless.¹³ In the United States, cannabis is classified as a Schedule I drug. Schedule I drugs are defined as “a drug with no currently accepted medical use and a high potential for abuse.”¹⁵ However, at the time of this writing, the District of Columbia and eight states have legalized small amounts of marijuana for personal recreational use, and 21 states have decriminalized marijuana.¹⁶ According to the National Institute of Drug Abuse, a 2014 survey showed that 22.2 million Americans used marijuana in the month they were surveyed.¹⁷ Cannabis is the most widely used illicit drug in the United States.¹⁷

Delta9-tetrahydrocannabinol (THC) is the substance in cannabis that causes the strongest psychoactive effects.^{12,13} Most people will have varied responses to THC from calmness to anxiety or paranoia.^{12,13} Cannabidiol (CBD) and THC bind to CB1 receptors in parts of the brain and nervous system.^{12,13,18} In contrast to THC, CBD tends to have a relaxing effect on many people.^{12,13,18} CB2 receptors are primarily located on some immune system cells.^{12,13,18} When bound to CB2 receptors, CBD or THC can reduce pain and inflammation.^{12,13,18} Currently 28 states in the United States, plus the District of Columbia, Puerto Rico, and Guam, have legalized cannabis for medical use.¹⁹ Hybrid strains of cannabis are bred to produce the desired balance of THC to CBD.^{12,14} For medicinal use, higher CBD content is desired along with lower THC to

minimize psychoactive side effects.^{12,13} For recreational use, cannabis users have different preferences for THC and CBD ratios.¹³

Due to the classification of cannabis as a DEA Schedule I drug, there have been limited studies on breastfed children of cannabis users. Hale and Rowe, in the latest edition of *Medications and Mothers' Milk*, state that cannabis should not be used by breastfeeding mothers due to risks of delayed motor development in infants, small head circumference among young adolescents, and animal studies showing reduced prolactin levels which could possibly lower maternal milk supply.² Many of these studies focused on cannabis use during pregnancy and breastfeeding have small study populations and some studies are confounded by recall bias, mothers' polysubstance abuse, or other social or behavioral factors.^{4,20} Few of the children in these studies were exclusively breastfed due to the prevalence of infant formula supplementation.²⁰ Breastfeeding combined with supplemental formula feeding, also called "mixed feedings" is considered a strong confounder in any study involving breastfeeding.²¹ In addition, no study has shown long-term effects on children exposed to cannabis through breastfeeding.^{3,4} Some medical professionals urge continued breastfeeding even if mothers use marijuana citing that the benefits of breastfeeding outweigh the risks of marijuana exposure through breastmilk.⁴

Medical Provider Knowledge of Marijuana Use

There are no published studies that specifically address medical provider perceptions of recreational marijuana use among breastfeeding women. A recent study conducted in Colorado surveyed 114 providers who care for pregnant and breastfeeding women, children, and adolescents. The providers were surveyed about their knowledge of Colorado state laws relating to marijuana use, the health and safety risks, providers' education, and clinical practice.²² While

many of the providers were knowledgeable about the laws, most felt they lacked knowledge about the health risks of marijuana use and felt unable to adequately counsel patients.²²

In 2014, a group of lactation professionals attending the Vermont Lactation Consultant Association conference participated in a survey of five close-ended questions about breastfeeding and marijuana use.²³ The first three questions focused on the demographics of the survey participants and an estimate of how many breastfeeding mothers with whom they have worked. One question reflected the participant's current stance on marijuana use and breastfeeding; the other question asked on what resources the participants rely to support their stance.²³ The limitations of this particular study are the small sample size and close-ended questions. The study did not allow for participants to elaborate on their answers and the authors state that use of marijuana while breastfeeding is a subject for which "lactation professionals could benefit from more guidance on this topic, informed by additional research."²³

Breastfeeding is strongly encouraged by the American Academy of Pediatrics (AAP). The AAP recommends exclusive breastfeeding for about six months and then "for one year or longer as mutually desired by mother and infant."⁵ The AAP further states that pediatricians should approach infant feeding not as a lifestyle choice but a "basic health issue" and the pediatrician's role is to advocate and support "proper breastfeeding practices".⁵ As more states legalize recreational marijuana use, more breastfeeding mothers are likely to disclose their recreational marijuana use to their health care providers who will need current, accurate information to appropriately counsel mothers on the risks of use versus the benefits of breastfeeding.

This research project aims to explore health care providers' perceptions of recreational marijuana use in women who are breastfeeding their children. This qualitative research project is unique in the goal to explore common themes among health care providers who work with

breastfeeding women and their children. These common themes will be found in providers' thoughts and opinions surrounding the importance of breastfeeding, the risks of maternal marijuana use to the breastfeeding child, and how best to counsel breastfeeding women. Ideally, this qualitative research will lead to building consensus among health care providers regarding health screening of mothers for potential substance abuse, advancing stronger research into the possible effects of maternal recreational marijuana use on breastfed children, and the development of educational materials or interventions for families.

METHOD

Institutional Review Board Application

A full application for institutional review was submitted to the University of Washington Human Subjects Division (HSD). The HSD determined that this research was exempt from review on March 18, 2016.

Recruitment

This qualitative research project was conducted in the Puget Sound area of Washington State. The study targeted various medical providers who work with pregnant women, new mothers, and their children. The semi-structured interview guide was made available to medical doctors, naturopaths, osteopaths, nurse practitioners, midwives, and lactation consultants in private practice. Facebook social media platform was utilized to invite participants to answer interview questions online via the Survey Monkey website. In addition, email invitations were distributed to three major health care systems in the Puget Sound area. Appendices A and B show the recruitment script and consent form made available to invited participants. The link to the semi-structured interview guide on

the Survey Monkey website was open to interested participants between April and June of 2016.

Data Collection and Analysis

Forty-one participants accessed the Survey Monkey website for this study and agreed to the consent page. The providers were guided to answer demographic questions about their professional specialty, time in practice, and their gender. Demographic data are reported in Table 2. Some participants completed the demographic information but did not complete any of the questions in the semi-structured interview guide. These participants were eliminated from the analysis. The webpage remained open until a total of 30 participants had answered nearly all the semi-structured interview questions.

Of the 41 participants who accessed the only semi-structured interview questions, 30 responded to most of the questions that were used for the analysis. Ten questions from the semi-structured interview guide were analyzed for this thesis project (Table 3). Several questions were answered by all 30 participants; however, some participants skipped questions that were not relevant to their scope of practice. For example, question 3 was directed only to medical providers who have prescriptive authority. All questions analyzed had between 23 and 30 responses allowing the researcher sufficient data for coding. Free-hand color coding was used to track common answers and identify emerging themes within providers' responses. Tables 4 through 13 reflect the categorical codes that emerged from the analysis of responses, as well as examples of individual participant responses to each question. The researcher's coding was independently examined and validated by two other persons who provided consultation on this project.

RESULTS

Participant Demographics

Of the 41 participants who accessed the interview guide, 30 answered most of the questions. This qualitative study focused on the responses of these 30 participants. Family practice physicians made up the bulk of participants (n=12, 40.0%), followed by midwives (n=6, 20%), obstetricians (n=4, 13.3%), and pediatricians (n=4, 13.3%). In addition, there was one private practice lactation consultant (n=1, 3.3%) and one breastfeeding medicine specialist (n=1, 3.3%). Midwives were grouped together as several of them identified both as certified nurse midwives and licensed midwives.

Two participants did not identify with a provider specialty in the demographic input section at the beginning interview guide; however, one of these two participants identified as a “clinical psychologist” in a response to a question. The other respondent did not identify with any specialty. The decision was made to include their responses to enrich the overall analysis. Most participants identified as female (n=25, 83.3%) versus male (n=5, 16.7%). Participants were asked how long they have been in practice in their specialty. Forty percent (n=12) of the participants had been in practice from one to five years, 20.0% (n=6) for six to ten years, 16.7% (n=5) for 11 to 15 years, 3.3% (n=1) for 16 to 20 years, and 20.0% (n=6) for 21 or more years. Table 2 displays the demographic data of the study participants.

Common emergent themes

The central research question of this project was to discover what concerns providers have regarding recreational marijuana use in breastfeeding women. Eight common themes are addressed in this analysis: benefits of breastfeeding for mother and child, provider thoughts on

medical marijuana use, parents' disclosure of marijuana use to providers, risks to infants by maternal use of recreational marijuana, benefits of breastfeeding versus risk of recreational marijuana use, involvement of Child Protective Services, providers' specific concerns about maternal recreational marijuana use, and provider access to professional education on marijuana use during pregnancy or lactation.

Benefits of breastfeeding for both mother and child (Tables 4 and 5, Questions 1 and 2)

The first two questions in this project focused on the providers' thoughts of the health benefits of breastfeeding for both child and mother. The emerging theme from these questions is that health and bonding/attachment were the top two benefits listed by providers for both babies and mothers. For breastfeeding children, health benefits were mentioned in 77.0% (n=23) of responses and included digestive health, nutrition, and general health benefits. Provider responses included:

“[Breast milk is] easily digestible.” - *female family practice physician*

“[There is] overwhelmingly clear evidence of improved immunological status, less atopic disease, less chronic disease, less obesity, appropriate distribution of nutrients, maternal [infant] bonding, decreased [post-partum depression].” - *female pediatrician*

For breastfeeding mothers, health benefits were mentioned in 60.0% (n=18) of responses and included breast cancer prevention, maternal weight loss, and decreased postpartum depression. Example of provider responses included:

“[Maternal] weight loss, decreased risk of breast cancer.” - *female obstetrician*

“Decreased post-partum depression.” - *female pediatrician*

For both mother and baby, the bonding and attachment benefits were noted by 73.0% (n=22) of providers. Provider responses on the benefits of bonding during breastfeeding were similar for both mother and baby: attachment, comfort, and psychosocial benefits. For baby, the responses for psychosocial benefits included:

“Optimal physical and emotional development.” - *female lactation consultant*

“Snuggling.” – *male breastfeeding medicine specialist*

For mother, these same benefits included:

“Emotional and physiological attachment to the child.” - *female lactation consultant*

“Feeling she is giving [her child] a good start in life.” - *female family practice physician*

Providers also noted that breastfeeding provides important immunological benefits for the child (n=19, 63.0%). This categorical code included references to the immune system, immune function, and antibodies. Provider responses included:

“Immuno-protection.” – *male pediatrician*

“Antibodies.” – *female midwife*

For mothers, providers noted additional benefits of breastfeeding such as cost (n=10, 33.0%) and convenience (n=8, 27.0%). Provider responses included:

“Much cheaper than formula.” – *female clinical psychologist*

“Ease of feeding anytime/place.” – *female midwife*

Provider authorization for medical marijuana (Tables 6 and 7, Questions 3 and 4)

Two questions in the semi-structured interview guide directed providers to consider and respond about maternal use of medical marijuana during breastfeeding. Question 3 (Table 6) was directed at providers whose scope of practice allows them to authorize use of medical marijuana for a patient. Providers were asked if there are situations where they might authorize use of medical marijuana to a breastfeeding mother. Twenty-three providers responded to this question: fifteen providers responding “no” and eight responding “maybe.” Most of the providers who responded as “not likely” that they would authorize medical marijuana to a breastfeeding mother were family practice physicians (n=9, 60.0%). Obstetricians/midwives were split in their response to this question. Eight out of ten obstetricians/midwives responded to this question with 50% (n=4) stating they would not authorize use and 50% (n=4) stating they might authorize use. The sole breastfeeding medicine specialist responded that they may authorize use, as did two family practice physicians and one pediatrician. Two pediatricians stated they would not authorize use.

Provider responses were varied on this question. One provider, a male family practice physician, stated bluntly, “...it would be stupid to sign an authorization [for medical marijuana] to a breastfeeding mother.” Other providers stated the following reasons as to why they might authorize use of medical marijuana to a breastfeeding mother:

“[for] intractable migraines, uncontrollable seizures” – *female pediatrician*

“chronic debilitating pain” – *female obstetrician*

“chemotherapy relief” – *female family practice physician*

Seven providers declined to answer the question. These providers likely cannot legally authorize medical marijuana use for a patient within their scope of practice.

Question 4 (Table 7) asked the providers if they would encourage or discourage a mother who already had medical authorization for medical marijuana to continue breastfeeding. The responses to this question were more varied than the above question with more providers stating they would “encourage” continued breastfeeding or “unsure” (n=17, 63%) rather than “discourage” (n=10, 37%). A few of the ten providers who stated they would discourage continued breastfeeding stated their reasons as:

“Not clear what the effects of marijuana would do to the developing brain.” –
female family practice physician

“Outcomes are unclear regarding risk.” – *female, unknown specialty*

“Unknown evidence of safety to child.” – *male family practice physician*

For the providers who were unsure if they would encourage or discourage medical marijuana use, their responses were more focused on the individuality of each situation and the safety of use.

“Not sure – would need to assess each situation.” – *female pediatrician*

“Might encourage with more info on effects.” – *female obstetrician*

“My decision would depend on safety data for the infant.” – *female family practice physician*

The providers who would encourage continued breastfeeding responded that the benefits of breastfeeding outweighed the evidence of risk of medical marijuana use.

“I am not aware of any evidence that risk of breastfeeding while using medical marijuana outweighs benefits of continuing to breast feed.” – *male pediatrician*

“Encourage, better than not breastfeeding.” – *female family practice physician*

Three providers declined to answer question 7.

Parental disclosure of marijuana use to providers (Table 8, Question 5)

In question 5, providers were asked if more parents in their practices were disclosing their use of recreational marijuana use since legalization. Five providers did not answer this question. However, of the 25 providers who did respond, the majority responded with “yes” (n=21, 84%). Providers’ written responses included:

“Absolutely.” – *female clinical psychologist*

“Many more.” – *male family practice physician*

“YES! Stigma is gone and all the pot smokers have come out of the woodwork.” –
female midwife

Risk to infants due to maternal use of recreational marijuana (Table 9, Question 6)

Question 6 explored providers’ thoughts about the risk to breastfeeding children if their mothers use recreational marijuana. Five providers did not answer this question. Of the 25 providers who did answer, 52.0% (n=13) responded that a breastfeeding child was at risk due to maternal recreational marijuana use while 44.0% (n=11) were unsure if children were at risk. Only one provider did not feel there was any risk to the child due to maternal marijuana use. This provider, a female family practice physician, stated, “Probably not directly at risk from the breast milk, but I don’t have data to support that.”

For the providers who did feel children are at risk from maternal marijuana use, their main concerns focused on the possible effects of THC on the child's developing brain, exposure to environmental smoke, or the risk of mother's judgement becoming impaired while using.

Examples of provider responses include:

“Yes, not clear what marijuana does to the developing brain.” – *female family practice physician*

“I do think it affects the baby because mother might be unable to care for the baby as well while using.” – *female clinical psychologist*

“Risk of second hand smoke.” – *male family practice physician*

The providers who are unsure about the risks had similar concerns (“If regular [use], might compromise judgement.” – *female obstetrician*) but many responses included “not sure” or “unsure” or “need more info.” The need for more information is expressed in several responses by providers who answered “maybe” or “yes”.

“It does transfer but I don't think we have enough information to educate on the risks.” – *female midwife*

Benefits of breastfeeding versus risk of recreational marijuana use (Table 10, Question 7)

Question 7 stated: “Do the benefits of breastfeeding outweigh the risks of recreational marijuana use during breastfeeding? Why or why not?” Twenty-four providers answered this question. Of those 24, just two (8.3%) responded with “no”, both female family practice physicians. Most responses were “unsure/maybe” (n=13, 54.2%), or “yes” (n=9, 37.5%). For the unsure/maybe responses, the key concept noted was that possibly or probably the benefits of breastfeeding outweigh the risks. Examples of providers' responses are:

“Probably benefits outweigh risks.” – *female family practice physician*

“Light use may not be high risk.” – *female obstetrician*

“Probably? Again, lack of clear data.” – *male pediatrician*

Providers who stated “yes” were clear in their responses. Examples of these provider responses are below:

“[Benefits of breastfeeding] outweigh [risks].” – *female family practice physician*

“Definitely [benefits outweigh risks].” – *female lactation consultant*

“Yes. I believe a minimal amount is transferred to breast milk.” – *female pediatrician*

Examples of the no responses include “No, not when mothers can have access to WIC provided formula.” (Female family practice physician.) And simply, “No.” (Female family practice physician.)

Does use of recreational marijuana while breastfeeding warrant contact with Child Protective Services (Table 11, Question 8)

This question explored the possibility of a mother’s use of recreational marijuana warranting referral to Child Protective Service (CPS). Twenty-four providers responded to this question. Only one provider, a male family practice physician, felt that a mother should be referred to CPS for using recreational marijuana while breastfeeding. This provider did not elaborate on their answer. Most providers (n=18, 75.0%) did not believe recreational use of marijuana by a breastfeeding mother warranted a CPS referral. Examples of the responses are:

“No, I don’t think it’s harmful enough to warrant referral.” – *female family practice physician*

“No, it doesn’t mean she is abusive or inattentive.” – *female lactation consultant*

“No, courts are not a place for clinical management.” – *male obstetrician*

Providers who considered that referral to CPS may be warranted (n=5, 20.8%) were more likely to look at other factors or concerns in the child’s home. Examples of providers’ responses include:

“Depends on the home situation and child’s safety.” – *female family practice physician*

“I would be more concerned with the frequency of use and level of impairment from use. It’s potentially worth a call in certain situations.” – *female family practice physician*

“Depends on the individual situation and if other drug use or social hazards are involved. This is a fine line!” – *female obstetrician*

Specific concerns about a mother using recreational marijuana while breastfeeding (Table 12, Question 9)

This question explores the providers’ primary concerns about maternal recreational marijuana use while breastfeeding. The most commonly cited concern by providers was “unknown risk to child” (n=14, 46.7%). This concern includes all cited terms related to

“unknown” or “uncertain” risk to a child of transmission of THC and other components of marijuana through the breastmilk. Examples of providers’ responses include the following:

“Unknown effects of compounds in marijuana on child development.” –
female family practice physician

“Uncertain long-term effects to child.” – *male family practice physician*

“I would like to have a better idea of the most recent studies into
outcomes.” – *female midwife*

The second most cited concern was the risk to the child by mother’s marijuana use which includes all terms related to maternal impairment, neglect, impairment of judgement (n=11, 36.7%). Examples of providers’ responses included:

“[Effect] on mother to care for the baby.” – *male obstetrician*

“Possible inattention to child and potential for neglect while high on
marijuana.” – *female family practice physician*

“Use [may] impair her judgement.” – *female obstetrician*

Some providers mentioned specific health concerns for children, primarily the possible effect of THC on the growing child’s brain (n=9, 30.0%). Examples of providers’ responses included:

“Effects of marijuana on developing brain.” – *female family practice
physician*

“May [cause] some learning difficulties in the child.” – *female
obstetrician*

“THC’s effect on the developing brain.” – *female midwife*

Other concerns expressed by providers included concerns about the dose of marijuana used by mothers (n=3, 1.0%). Dose related concerns include the frequency and amount a mother is using. Providers also had concerns about mother’s “parental role modeling” and the possibility of poly-substance use. Examples of provider responses included:

“How much is she using, how frequently?” – *female family practice physician*

“Poor example to child.” – *female family practice physician*

“She may be using other substances.” – *female obstetrician*

Professional education for providers on the use of marijuana during pregnancy/or lactation

(Table 13, Question 10)

Question 10 asked the providers if they have independently researched or attended professional education events that focus on maternal use of marijuana during pregnancy and/or lactation. Twenty-six providers responded to this question and nearly all had not researched or attended such an event (n=23, 88.5%). Only three providers stated that they had researched or attended professional education events (n=3, 11.5%). Provider responses included:

“Yes, conferences.” – *female midwife*

“Pediatric conference in Portland, OR, focused on teens and marijuana use.” – *female family practice physician*

“Not enough.” – *female midwife*

DISCUSSION

This qualitative study was conducted to explore medical provider perceptions of breastfeeding mothers who use recreational marijuana. The benefits of breastfeeding to both mother and child are evidence-based, and breastfeeding is recommended by all professional medical associations and organizations.^{5,24,25,26} The providers who participated in this study expressed staunch support for breastfeeding and were clear in their knowledge of the physical, emotional, and psychosocial health benefits for both mother and child. Most of the providers' responses to the semi-structured interview guide reflected concern for early weaning from the breast considering the sparse research currently available on the risks of recreational marijuana use during breastfeeding. But providers were also cautious to recommend continued breastfeeding with maternal marijuana use for the same reason: data are scarce about the possible effects of transfer of THC and other cannabinoids through breastmilk to children.

Recreational marijuana use versus medicinal marijuana use in breastfeeding mothers

This study examined providers' opinions on both medicinal and recreational use by breastfeeding mother. At the beginning of the semi-structured interview guide, providers were asked if they would authorize medical marijuana use to a breastfeeding mother. As noted in the results, most providers with prescriptive authority appeared reluctant to authorize medical marijuana to a breastfeeding mother (n=15 would not authorize use, n=8 might authorize use). However, when providers were questioned if they would discourage breastfeeding if a woman had already secured authorization for medical marijuana, providers were more likely to encourage continued breastfeeding. Providers appeared to be uncomfortable with authorizing medical marijuana use in a breastfeeding mother, but would likely encourage continued breastfeeding if another provider had already authorized use. These seemingly incongruous

responses may reflect providers' concerns about professional liability rather than a belief that medical marijuana is contraindicated in breastfeeding.

Most providers stated that many more parents are disclosing recreational use of marijuana since Washington State legalized possession of marijuana in 2012. As one provider stated in the interview guide: "YES! Stigma is gone and all the pot smokers have come out of the woodwork." Even so, providers are more likely to discourage recreational marijuana use while breastfeeding than discourage medical marijuana use. A deeper investigation into marijuana laws in Washington State yields some intriguing information about medicinal marijuana authorization. In Washington State, medical providers sign an authorization form that allows the patient to legally use marijuana for certain conditions.²⁷ Health care providers do not prescribe the type of medical marijuana the patient must use, nor do they designate where the patient may acquire the marijuana for medicinal use. In addition, medical providers do not prescribe nor recommend a therapeutic dosage of CBD or THC (or both).^{27,28} Patients with medical marijuana authorizations are truly medicating themselves. Some studies show that it's not uncommon for people to overlap recreational and medical use of marijuana.²⁸ Yet providers appear more comfortable with continued breastfeeding with maternal use of medical marijuana use than recreational marijuana use.

Counseling parents in risks and benefits

Health care providers who work with breastfeeding women and their children can have a powerful impact on the success of the breastfeeding relationship. However, many providers can be inconsistent in how they support breastfeeding women.²⁹ A study published in 2009 found that breastfeeding support and promotion must require "a high degree of culturally sensitive and individualized attention to breastfeeding dyads' needs."²⁹ And healthcare providers need

“structured, consistent, and ongoing education and training in order to counsel women properly...”²⁹

The most common theme that emerged from the providers’ responses in this qualitative research project was lack of data available on the risks versus benefits of marijuana use while breastfeeding. Providers frequently used statements such as “risks unknown”, “need more info”, and “I don’t think we have enough information to educate on the risks.” The providers expressed clear concerns about the potential risks to the child of marijuana use while breastfeeding, citing most frequently concerns about the effects of THC transmitted through breastmilk, impact on child’s brain growth, second-hand smoke, and the risk of impaired judgement in a mother who is using. However, as with medical use of marijuana, providers were generally supportive of continued breastfeeding, stating that “probably” the benefits of breastfeeding outweigh the risks of marijuana use, especially if mother’s use is light. The providers’ responses generally align with most current reviews and recommendations on marijuana use and breastfeeding.^{3,4}

At the time of this writing, there does not appear to be studies focused on counseling women on marijuana use and breastfeeding. A qualitative study published in 2016 looked at obstetric providers and “their attitudes and counseling strategies regarding perinatal marijuana use.”³⁰ The obstetricians who participated in that study worked in urban clinics in Pittsburgh, Pennsylvania, a state where recreational marijuana is illegal. Similar to this study, the Pennsylvania obstetricians feel that studies about the effects on marijuana use on the unborn child are “flawed or limited” and that “lack of scientific evidence affected...how they counseled their patients.”³⁰

One marked difference in comparison to this qualitative study is that due to the illegal status of recreational marijuana, the Pennsylvania obstetricians stated that they often use the threat of social service involvement, including a referral to Child Protective Services, to motivate their pregnant patients to stop using marijuana.³⁰ In this marijuana and breastfeeding research project conducted in Washington State where possession of marijuana is legal, providers were asked if a referral to Child Protective Services (CPS) would be warranted if a breastfeeding mother states she will continue to use recreational marijuana. Only one provider stated that a referral would be warranted but did not elaborate as to why. Five providers stated “maybe” depending on other factors in the home or if the child’s safety was a concern. However, most providers did not think referral to CPS would be appropriate, preferring to counsel mothers in the medical setting. As one provider stated, “the courts are not the place for clinical management.”

Limitations of this qualitative study

This qualitative research project has several limitations. The sample population of participants was limited to 30 and participants were recruited from only one region in the United States where recreational marijuana is legal. A larger sample size of participants would allow for more diverse responses, and recruiting participants from states that have not legalized possession of marijuana for recreational use would likely enrich the analysis and increase the relevance of this study to other U.S. states.

Another limitation of this qualitative study is the semi-structured interview guide administered on-line did not allow for deeper investigation into the participants responses as would typically happen with in-person interviews conducted through, for example, a grounded theory qualitative research methodology. In-person interviews with providers could be valuable to explore more deeply the providers’ biases about marijuana use, their thoughts and feelings

about medical marijuana versus recreational marijuana use, concerns about poly-substance use in breastfeeding mothers, the involvement of social services (e.g. Child Protective Services), and what continuing education a provider would like to see offered on the topic of marijuana use in breastfeeding women.

CONCLUSION

The providers who participated in this research project feel strongly that breastfeeding is important to the health and psychosocial development of both mothers and children. Optimum nutrition, immunological support, bonding and attachment, breast health, and reduced risk of postpartum depression were named as key advantages to breastfeeding. However, providers had concerns about marijuana use in breastfeeding mothers. The providers appeared to be more comfortable with supporting continued breastfeeding in women who are using marijuana for medicinal reasons, but were more reluctant to support recreational use of marijuana in breastfeeding mothers. The primary concerns providers expressed for marijuana use during breastfeeding included: transfer of THC from mother to child via breastmilk, unknown effect on children from exposure to THC, and concerns about brain development in exposed children. Providers were also concerned about the child's exposure to second-hand smoke, risk of Sudden Infant Death Syndrome, and the mother's ability to care for her child while under the influence of marijuana.

Providers expressed concern that research into the risks of marijuana use during breastfeeding is lacking thus causing difficulty in appropriately counseling families. Only three providers stated they had some continuing education or attended a conference focused on marijuana. The lack of professional education available on marijuana use during breastfeeding reflects the lack of current research on the subject. Clearly, more research is needed into the

effects of both medicinal and recreational use of marijuana during breastfeeding. As marijuana use becomes legal in more states within the United States, exploratory research in the form of prospective or retrospective cohort studies would likely provide more insight into possible long-term physical and/or psychosocial effects on children.

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Table 1 - Dose-Response Benefits of Breastfeeding by Condition		
Condition	% Lower Risk	Breastfeeding Duration
Otitis media	23	Any
Otitis media	50	>=3 or 6 mos
Recurrent otitis media	77	Exclusive BF >=6 mos
Upper respiratory tract infection	63	Exclusive BF >=6 mos
Lower respiratory tract infection	72	Exclusive BF >=4 mos
Lower respiratory tract infection	77	Exclusive BF >=6 mos
Asthma	40	>=3 mos (family history)
Asthma	26	>=3 mos (no family history)
RSV Bronchiolitis	74	>4 months
NEC	77	During NICU stay
Atopic Dermatitis	27	>3 mos (no family history)
Atopic Dermatitis	42	>3 mos (family history)
Gastroenteritis	64	Any breastfeeding
Inflammatory Bowel Disease	31	Any breastfeeding
Obesity	24	Any breastfeeding
Celiac Disease	52	>2 mos (gluten exposed during breastfeeding)
Type 1 Diabetes	30	>3 mos exclusive breastfeeding
Type 2 Diabetes	40	Any breastfeeding
Leukemia (ALL)	20	>6 mos
Leukemia (AML)	15	>6 mos
SIDS	36	Any >1 month
<i>Note: Table adapted from Breastfeeding and the Use of Human Milk. Pediatrics. 2012.</i>		

Table 2 – Demographic Table of Provider Participants (n=30)		
Participants by Provider Specialty		
Family Practice	12	40.0%
Pediatrics	4	13.3%
Obstetrics/Gynecology	4	13.3%
Midwives (CNM and LM/CPM)	6	20.0%
Private Practice Lactation Consultant	1	3.3%
Breastfeeding Medicine	1	3.3%
Other (Clinical Psychologist/Unknown)	2	6.7%
Participants by Time in Practice		
0 – 5 Years	12	40.0%
6 – 10 Years	6	20.0%
11 – 15 Years	5	16.7%
16 – 20 Years	1	3.3%
21 or more years	6	20.0%
Participants by Gender		
Female	25	83.3%
Male	5	16.7%

Table 3 – Questions from Semi-Structured Interview Guide
1. What aspects of breastfeeding are most advantageous to an infant, baby, or toddler?
2. What aspects of breastfeeding are most advantageous to women who breastfeed?
3. For all providers with prescriptive authority, are there situations when you might prescribe medical marijuana to a patient who is currently breastfeeding a child? If so, please describe those situations.
4. Would you encourage or discourage a mother who has a prescription for medical marijuana to continue breastfeeding? If so, why would you encourage or discourage use of marijuana during breastfeeding?
5. Since the legalization of marijuana in your state, have more parents in your practice disclosed their recreational marijuana use?
6. Is an infant/child at risk if his/her mother uses recreational marijuana while she is breastfeeding? Why or why not?
7. Do the benefits of breastfeeding outweigh the risks of recreational marijuana use during breastfeeding? Why or why not?
8. If a mother states she will continue to use recreational marijuana while breastfeeding, is a referral to Child Protective Services warranted? Why or why not?
9. If you have concerns about a mother using recreational marijuana while breastfeeding her infant/child, what are your specific concerns?
10. Have you independently researched or attended professional education events that focused on maternal use of marijuana during pregnancy and/or lactation? If so, briefly describe the event (conference, in-service, grand rounds, etc.).

Table 4 – Question 1: What aspects of breastfeeding are most advantageous to an infant, baby, or toddler?		
Code (# of responses)	Definition of Code	Examples of Responses
Health (n=23, 77%)	Health includes all terms related to digestive health, nutrition, and general “health benefits”	“easily digestible” “nutrition” “overwhelmingly clear evidence of...less chronic disease, obesity, appropriate distribution of nutrients...”
Immunological Benefits (n=19, 63%)	Immunological Benefits includes all terms related to immune system, immune function, or antibodies.	“helps with immunity” “provides antibodies” “decrease in infection”
Bonding (n=22, 73%)	Bonding includes all terms related to attachment to mother, comfort, psychosocial benefits	“attachment to the mother” “optimal emotional development” “attachment/bonding”

Table 5 – Question 2: What aspects of breastfeeding are most advantageous to women who breastfeed?		
Code (# of responses)	Definition of Code	Examples of Responses
Bonding (n=22, 73%)	Bonding includes all terms related to attachment to child, comfort, psychosocial benefits, maternal satisfaction	“emotional and physiological attachment to the child” “feeling she is giving (child) a good start in life” “bonding with infant”
Health (n=18, 60%)	Health includes all terms related to breast cancer prevention, weight loss, decreased postpartum depression, general health benefits	“decreases risk of breast cancer” “decreased postpartum depression” “greater ability to lose weight postpartum”
Cost (n=10, 33%)	Cost includes savings on cost of formula, bottles, etc.	“economical” “money savings” “much cheaper than formula”
Convenience (n=8, 27%)	Convenience includes terms related convenience and ease of breastfeeding	“availability” “ease of preparation” “ease of feeding anytime/place”

Table 6 – Question 3: For all providers with prescriptive authority, are there situations when you might prescribe medical marijuana to a patient who is currently breastfeeding a child? If so, please describe those situations.		
Code (# of responses)	Responses by Provider	Examples of Responses
No (n=15, 50%)	Family Practice (9/15) Pediatrics (2/15) OB/Midwives (4/15)	“...it would be stupid to sign an authorization (for medical marijuana) to a breastfeeding mother”
Maybe (n=8, 27%)	Family Practice (2/8) Pediatrics (1/8) OB/Midwives (4/8) Breastfeeding Medicine (1/8)	“intractable migraines, uncontrolled seizures” “chronic debilitating pain” “chemotherapy relief” “depression”
No Answer (n=7, 23%)		

Table 7 – Question 4: Would you encourage or discourage a mother who has a prescription for medical marijuana to continue breastfeeding? If so, why would you encourage or discourage use of marijuana during breastfeeding?	
Code (# of responses)	Examples of Responses
Discourage (n=10, 33%)	<p>“Not clear what the effects of marijuana would do to the developing brain.”</p> <p>“outcomes are unclear regarding risk”</p> <p>“unknown evidence of safety to child”</p>
Unsure/Maybe (n=9, 30%)	<p>“Not sure – would need to assess each situation.”</p> <p>“Might encourage with more info on effects.”</p> <p>“My decision would depend on safety data for the infant.”</p>
Encourage (n=8, 27%)	<p>“I am not aware of any evidence that risk of breast-feeding while using medical marijuana outweighs benefits of continuing to breast feed.”</p> <p>“I would encourage her to continue nursing as I have not been provided evidence to the contrary.”</p> <p>“Encourage, better than not breastfeeding.”</p>
No answer or unclear response (n=3, 10%)	

Table 8 – Question 5: Since the legalization of marijuana in your state, have more parents in your practice disclosed their recreational marijuana use?	
Code (# of responses)	Examples of Responses
Yes (n=21, 70%) No (n=4, 13%) Unsure or No Answer (n=5, 17%)	<p>“Haven’t kept count but not many.”</p> <p>“Absolutely.”</p> <p>“Many more.”</p> <p>“YES! Stigma is gone and all the pot smokers have come out of the woodwork.”</p>

Table 9 – Question 6: Is an infant/child at risk if his/her mother uses recreational marijuana while she is breastfeeding? Why or why not?		
Code (# of responses)	Definition of Code	Examples of Responses
Yes (n=13, 43%)	Concerns about infant brain growth, THC in breast milk, second hand smoke, asthma, concerns about parents caring for children under the influence	“concern about THC through breast milk and the adverse effects it can have on attention and learning” “baby is at higher risk, particularly to surrounding environmental smoke” “Impaired judgement possible when using.” “Risks unknown.”
Unsure/Maybe (n=11, 37%)	Concerns about lack of information about marijuana use while breastfeeding	“Not sure, I need more info.” “More studies needed.” “If used occasionally, like alcohol, might not put children at risk.” “It does transfer, but I don’t think we have enough information to educate on the risks.”
No (n=1, 3%)		“Probably not directly at risk from the breast milk, but I don’t have data to support that.”
No Answer (n=5, 17%)		

Table 10 – Question 7: Do the benefits of breastfeeding outweigh the risks of recreational marijuana use during breastfeeding? Why or why not?

Code (# of responses)	Definition of Code	Examples of Responses
Yes (n=9, 30%)	Benefits outweigh risks.	“Yes, I believe a minimal amount is transferred to breast milk.” “Definitely.” “Outweigh.”
Unsure/Maybe (n=13, 43%)	Possibly or probably benefits outweigh risks, need more information.	“Probably benefits outweigh risks.” “Light use may not be high risk.” “It depends on the picture. I would suggest that in some cases the anxiolytic effects of the drug may be beneficial to some breastfeeding mothers.”
No (n=2, 7%)	No, benefits do not outweigh risks.	“No, not when mothers can have access to WIC provided formula.” “No.”
Blank or Unclear Answers (n=6, 20%)		

Table 11 – Question 8: *If a mother states she will continue to use recreational marijuana while breastfeeding, is referral to Child Protective Services warranted? Why or why not?*

Code (# of responses)	Definition of Code	Examples of Responses
No (n=18, 60%)	No referral to CPS.	<p>"No, I don't think it's harmful enough to warrant referral."</p> <p>"No, it doesn't mean she is inattentive or abusive."</p> <p>"No, courts are not the place for clinical management."</p> <p>"No, we don't make a referral for tobacco smokers."</p>
Maybe (n=5, 17%)	Possible referral to CPS.	<p>"Depends on the home situation and child's safety."</p> <p>"Depends on the individual situation and if other drug use or social hazards are involved."</p> <p>"I would be more concerned about the frequency of use and level of impairment from use. It's potentially worth a call in certain situations."</p>
Yes (n=1, 3%)	Yes, referral is warranted.	"Yes." (no further explanation)
Blank Answers (n=6, 20%)		

Table 12 – Question 9: If you have concerns about a mother using recreational marijuana while breastfeeding her infant/child, what are your specific concerns?

Code (# of responses)	Definition of Code	Examples of Responses
Unknown Risk to Child (n=14, 47%)	Risks to child via breastmilk includes all terms related to unknown or uncertain risks; or responses that don't mention a specific risk	"Unknown effects of compounds in marijuana on child development." "Uncertain long term effects to child." "I would like to have a better idea of the most recent studies into outcomes."
Risk to Child by Mother's Use (n=11, 37%)	Risk from mother's use includes all terms related maternal impairment, neglect, impairment of judgement	"Effect on mother to care for the baby." "Possible inattention to child and potential for neglect while high on marijuana." "Use may impair her judgement."
Specific Health Risks to Child (n=9, 30%)	Health risks to child include brain development and exposure to second-hand smoke.	"Effects of marijuana on developing brain." "May (cause) some learning difficulties in the child." "THC's effect on the developing brain."
Dose Related Concerns (n=3, 1%)	Dose related concerns include how frequently and in what amount a mother is using marijuana.	"How much is she using, how frequently?" "How much is she exposing the baby to?" "How much, how often, amount of exposure."
Other Concerns	Other concerns include reasons for use, parental role modeling, poly-substance use.	"Why is she using?" "Poor example to child." "She may be using other substances."

Table 13 – Question 10: Have you independently researched or attended professional education events that focus on maternal use of marijuana during pregnancy and/or lactation? If so, briefly describe the event (conference, in-service, grand rounds, etc.).

Code (# of responses)	Examples of Responses
No (n=23, 77%)	"Never seen such an event." "Not enough."
Yes (n=3, 10%)	"Have not seen any."
No Answer (n=4, 13%)	"Yes, conferences." "Pediatric conference in Portland, OR, focused on teens and marijuana use."

Appendix A

Recruitment Script

The purpose of this research project is to collect responses from health care providers who work with mothers and/or children. This research project is headed by Kathleen Salisbury, BA, IBCLC, RLC, a graduate student in public health at the University of Washington School of Public Health. You are invited to participate in this research project because you are an established provider of health care for women and/or children.

Marijuana has been legalized for recreational use in several U.S. states, including Washington State. As a result, the concerns surrounding maternal recreational marijuana use in pregnant and breastfeeding mothers are rapidly gaining attention. The consensus among health care providers is that all drugs, licit and illicit, should be used with caution by pregnant women, and only under the supervision of the mother's health care provider. However, for breastfeeding women, medications/drugs are metabolized differently than in pregnancy. Fat solubility, protein binding, molecular weight, oral bio-availability, half-life, and other factors determine how much of a drug or medication will pass to a child through ingestion of breastmilk. This qualitative research study will gather responses from healthcare providers about the use of recreational marijuana by breastfeeding mothers through an on-line structured interview. The interview questions will focus on your thoughts and opinions regarding the use of drugs, medications, and marijuana by women who are breastfeeding a child.

Your participation in this research study is voluntary. You may choose not to participate. If you decide not to participate in this research project, you may withdraw at any time without penalty. The procedure involves completing an online structured interview guide that will take approximately 20-30 minutes. Your responses will be confidential and no identifying information such as your name, email address or IP address will be collected. The questions will focus on your thoughts and opinions regarding the use of drugs, medications, and marijuana by women who are breastfeeding a child.

We will keep your information confidential. All responses will be stored in a password protected electronic format. The responses will not contain information that personally identifies you unless you choose to enter such information. If you do enter identifying information, this information will be deleted. The results of this structured interview will be used for scholarly purposes only and may be shared with University of Washington representatives.

If you have any questions about the research study, please contact Kathleen Salisbury at salisk@uw.edu. This research has been reviewed according to the University of Washington IRB procedures for research involving human subjects.

Appendix B

Consent to Participate

The purpose of this research project is to collect responses from health care providers who work with mothers and/or children. This research project is headed by Kathleen Salisbury, BA, IBCLC, RLC, a graduate student in public health at the University of Washington School of Public Health. You are invited to participate in this research project because you are an established provider of health care for women and/or children.

Your participation in this research study is voluntary. You may choose not to participate. If you decide not to participate in this research project, you may withdraw at any time without penalty. The procedure involves completing an online structured interview guide that will take approximately 20-30 minutes. Your responses will be confidential and no identifying information such as your name, email address or IP address will be collected. The questions will focus on your thoughts and opinions regarding the use of drugs, medications, and marijuana by women who are breastfeeding a child.

We will keep your information confidential. All responses will be stored in a password protected electronic format. The responses will not contain information that personally identifies you unless you choose to enter such information. If you do enter identifying information, this information will be deleted. The results of this structured interview will be used for scholarly purposes only and may be shared with University of Washington representatives.

If you have any questions about the research study, please contact Kathleen Salisbury at salisk@uw.edu. This research has been reviewed according to the University of Washington IRB procedures for research involving human subjects.

ELECTRONIC CONSENT: Please select your choice below.

Clicking on the "agree" button below indicates that:

- **you have read the above information**
- **you voluntarily agree to participate**
- **you are at least 21 years of age**

If you do not wish to participate in the research study, please decline participation by clicking on the "disagree" button.

☐ agree

☐ disagree