

# “There’s not enough research about using”: everyday information triangulation about cannabis use in pregnancy and lactation

Maria Mulder

*School of Information, The University of British Columbia, Vancouver, Canada and  
School of Population and Public Health, The University of British Columbia,  
Vancouver, Canada*

Heather O’Brien

*School of Information, The University of British Columbia, Vancouver, Canada*

Faith English

*University of Massachusetts Amherst, Amherst, Massachusetts, USA, and*

Devon Greyson

*School of Population and Public Health, The University of British Columbia,  
Vancouver, Canada*

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## Abstract

**Purpose** – Cannabis use in pregnancy and lactation is under-researched and politically taboo, resulting in a challenging context for information seeking and health decision-making. This study explored the information needs and information seeking, assessing and triangulation behaviors of individuals considering cannabis use while pregnant or lactating within a challenging legal context.

**Design/methodology/approach** – Reflexive thematic analysis (RTA) was used to qualitatively analyze 23 in-depth interview transcripts with individuals in the state of Massachusetts who were considering cannabis use while pregnant or lactating. Themes from the study analysis were used to develop a new model of Everyday Triangulation (ET).

**Findings** – Four overarching themes were developed through RTA: (1) information needs are complex and contextual, (2) many information behaviors contribute to ET, (3) ET is complex, relational and intuitive, and (4) Complex information needs lead to complex and dynamic decisions. Themes were used to develop a novel model of ET as applied to this study’s population and context.

**Research limitations/implications** – This study presents several implications for information scientists to work collaboratively within public health contexts to better support health information seeking. Areas in need of further research within a public health context are also identified.

**Originality/value** – This study explores information needs and seeking behavior in a rarely studied population and unique legal context. A novel information behavior model is presented and applied, contributing robustly to the field of information science.

**Keywords** Information science, Health information seeking, Pregnancy, Information seeking, Cannabis, Information behavior, Population health, Everyday triangulation, Information triangulation, Information use

**Paper type** Research article

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## Introduction

Individuals are faced with new and evolving information needs daily. While some information needs remain relatively static over time, others are inherently dynamic and may require reassessment. While information needs vary greatly, context remains a critical element shaping those needs and how they are experienced and addressed. Individuals considering cannabis use during pregnancy or lactation may experience a wide range of information needs; these needs may be challenging to meet if information seeking is met by legal or information barriers.

When clinical information regarding a health topic is minimal or inconclusive, individuals may struggle to address their health information needs; this may be exacerbated by legal contexts that make information seeking challenging or risky. Additionally, under-researched health topics disproportionately affect marginalized populations, including women and transgender individuals, those who have racialized identities, or individuals experiencing stigmatized health conditions such as substance use (Gibson and Martin, 2019). Cannabis use in pregnancy and lactation is one such under-researched topic. The dearth of conclusive research has resulted in recommendations to abstain while pregnant or lactating. While cannabis use is legalized in many jurisdictions, legal use may remain ambiguous, such as when state and federal laws misalign. With a lack of medical guidelines, an ambiguous legal landscape, and inconclusive evidence regarding risks and benefits of use, information needs regarding cannabis use in pregnancy and lactation may remain unmet for many. Additionally, even attempting to address these information needs may have high legal, personal and medical stakes.

While triangulation is an established qualitative research method (Carter *et al.*, 2014), information triangulation used in everyday contexts, or “Everyday Triangulation” (ET), is less studied. Previous scholarship indicates that individuals who are considering health decisions may participate in some form of information triangulation in response to inconclusive, conflicting, or missing information (Greyson, 2018; McCormick *et al.*, 2023). Individuals considering cannabis use while pregnant or lactating may depend on varying and unique combinations of information behaviors to navigate a challenging information landscape. In addition to this challenging information landscape, individuals’ information-seeking processes may be interrupted by the highly stigmatized and politicized context surrounding substance use, though this remains unexplored.

To fill this gap, this study explores (a) the information needs of individuals considering cannabis use while pregnant or lactating and how well those needs are currently met, and (b) the information behaviors of individuals in response to identified needs. The study’s research questions were:

- RQ1. What are this population’s information needs relating to cannabis use in pregnancy and lactation, and how adequately are these needs met by existing resources?
- RQ2. In what ways are information triangulation, or other information seeking behaviors, used to meet identified information needs regarding cannabis use in pregnancy and lactation by this population?

Reflexive Thematic Analysis (RTA) (Braun *et al.*, 2022; Braun and Clarke, 2021) was used to qualitatively analyze 23 semi-structured interview transcripts with pregnant or lactating individuals who had or were still considering cannabis use. This research contributes an information behavior model of ET to demonstrate how the context and complexity of one’s information needs can have a significant effect on subsequent information behaviors performed to meet those needs. By exploring the information needs and behaviors of individuals within complex and high-stakes legal and information landscapes, this study will inform future Library and Information Science (LIS) scholarship and systems aimed at improving health information access, literacy and engagement in various populations.

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## Literature review

This study seeks to integrate and expand on established information behaviors and key LIS concepts to better understand the complex information triangulation practices of individuals in a specific, challenging, legal and informational context. This review outlines key behaviors and concepts relevant to the information needs and behaviors observed in this study.

### *Health information behavior*

Health information behavior is a broad area of research with many subspecialties addressing various populations and contexts. Much scholarship focuses on the Internet as a key source of health information (Lagan *et al.*, 2010; Prescott and Mackie, 2017; Song *et al.*, 2012; Taheri *et al.*, 2021; Yoon and Oh, 2023). Additionally, social media has become a key focus for many exploring information seeking, assessing and sharing behaviors (Afifi *et al.*, 2025; Neely *et al.*, 2021; Yi, 2018). In situations where medical research is rapidly evolving, conflicting or inconclusive, and in which face-to-face information seeking may be risky, the Internet can play a key role in individuals' health information seeking; this was evidenced in research exploring health information seeking relating to the developing COVID-19 pandemic (Soroya *et al.*, 2021). While the Internet can be an amazing resource, information quality can be a notable concern; health misinformation encountered online may lead to tangible health risks and implications (Scherer *et al.*, 2021; Suarez-Lledo and Alvarez-Galvez, 2021; Wardle and Singerman, 2021).

Scholars have also focused on the information-seeking and assessment practices of pregnant and postpartum people (Barnes *et al.*, 2019; Gjestvang and Haakstad, 2024; Goldbort *et al.*, 2021; Hughson *et al.*, 2018; Limbu *et al.*, 2020; McKenzie, 2004, 2006; Potnis and Halladay, 2021, 2022). Taheri *et al.* (2021) found that pregnant individuals differed in what they considered reliable information sources; some participants trusted the Internet while others did not. Other researchers (Song *et al.*, 2012) asserted that heavy use of the Internet for pregnancy-related information seeking can have a significant effect on doctor-patient relationships, with healthcare providers remaining resistant to additional information sources informing patients' decision-making. These researchers also note that while some pregnant people go to the Internet for more formal health information, such as academically published research or official government websites, others go to the Internet for informal or social support and information from peers. While the Internet has become a key tool for pregnant individuals to gain access to additional information, health information accessed online can come from a variety of sources with varying levels of reliability. Artieta-Pinedo *et al.*'s (2018) found that the majority of websites being accessed for pregnancy-related health information were of moderate, poor, or very poor quality. The authors also note that most sites accessed were not from official healthcare institutions or universities.

While the Internet and other more traditional sources of health information have been explored, recent scholarship has also introduced embodied experiences as potentially important sources of health information. In a recent study of Finnish transgender people's experiences of medical information behaviors, one scholar observed that many participants "relied on their own experiential knowledge while evaluating information" (Huttunen, 2023, p. 7); this involved triangulating what participants considered "authoritative information," such as medical directives from their primary care providers, with their own embodied experiences. The same study noted that participants used intuition as part of their information and information source assessment. While intuition and embodied experiences can be beneficial to the decision-making process, they can also be challenging if individuals encounter harmful or misleading information that "feels" right while increasing their risk of adverse health outcomes. Regarding health information, it is important for individuals to feel supported in balancing their lived experiences and intuition with information seeking and evidence uptake, especially when decisions have "higher stakes". How individuals find that balance may involve other information behaviors.

*Sensemaking and satisficing*

Sensemaking consists of an individual or group assigning meaning to information, connecting these meanings to each other and to previously established knowledge, and using these connections to make decisions or otherwise act in a more informed way (Zhang and Soergel, 2020). Early scholarship examined non-academics' formation of information needs and use of information (Dervin, 1983); more recent scholarship has applied sensemaking to both academic and non-academic contexts. Scholars also recently documented different discipline-specific definitions and applications of sensemaking (Urquhart *et al.*, 2024). Zhang and Soergel (2014) distinguished research from general sensemaking; research sensemaking tends to be more systematic in identifying knowledge gaps and results in formal intellectual products. General, non-academic sensemakers gain understanding of encountered information and are, subsequently, able to identify patterns and themes in newly encountered information that builds on their previous knowledge and deepens their understanding of their information need (Zhang and Soergel, 2016). In this study, general sensemaking in everyday contexts is of interest; while there may not be a formal process or product, sensemaking relating to health information needs may actively influence health decision-making.

Closely related to sensemaking, satisficing is the process by which an individual decides to stop their search for more information by weighing the benefits of encountering more information against the additional effort and possible risks of further information seeking (Prabha *et al.*, 2007). Satisficing is performed based on what individuals are able to find; if information is exceedingly difficult to access or understand, a satisficer may stop their information-seeking process prematurely, leaving an information need unmet (Prabha *et al.*, 2007).

*Triangulation and cross-checking*

Triangulation has been defined as the employment of multiple methods of observation for research within the social sciences (Denzin, 1978). Many scholars have built upon this foundational understanding of triangulation, making it a well-established qualitative method (Fusch *et al.*, 2018; Noble and Heale, 2019). Recent scholarship has expanded its definition and applied triangulation to everyday contexts, including with those whose information needs are not easily or immediately met. For instance, Huttunen (2023) articulated multiple methods of health information triangulation performed by transgender individuals regarding gender-affirming care. Greyson (2015, 2018) asserted that triangulation in everyday contexts is a complex information practice that allows individuals to remain agentive in their decision-making process. Greyson (2018) also noted that information-seeking and assessment practices observed in everyday contexts served a similar role for everyday individuals as more formal data triangulation practices for researchers and academics.

Closely related to triangulation, cross-checking is a verification process by which an individual attempts to affirm the factual accuracy of previously encountered or found information (Lavilles *et al.*, 2023). While some scholarship focuses on cross-checking behavior in specific contexts, such as social media (Lavilles *et al.*, 2023), Samu and Takács (2021) link gossip to an individual's ability to cross-check information in a way that increases social bonding within a community. In their study, key to the use of gossip for cross-checking was individuals' reliance on trusted information sources. The authors note that people tended to seek information from sources that were already considered trustworthy. This reliance on trust is an important aspect of many information assessment practices, including those explored in this article.

*Protective information behaviors*

In the search for topical health information, individuals may participate in a variety of protective information behaviors. Within Chatman's framework, information poverty may manifest as individuals adopting "self-protective" behaviors in response to societal and

cultural pressures (Buchanan and Husain, 2022; Chatman, 1996). Information avoidance and strategic non-disclosure are two such behaviors. Information avoidance occurs when an individual intentionally prevents or delays the acquisition or encountering of unwanted information (Shepperd and Howell, 2015; Sweeny *et al.*, 2010). Information avoidance is a well-established practice in many contexts (Dai *et al.*, 2020; Exley and Kessler, 2023; Golman *et al.*, 2017; Ho *et al.*, 2021; Horn *et al.*, 2024; Howell and Shepperd, 2016; Kelly and Sharot, 2021; Lagan *et al.*, 2010; Sharot and Sunstein, 2020; Shepperd and Howell, 2015). It is an information behavior that can be expressed as action, such as turning off a news report, or inaction, such as not entering a query into an Internet search engine (Shepperd and Howell, 2015). In the process of actively avoiding unwanted information, individuals may also actively withhold information within certain relationships to protect themselves from stigma, surveillance, or rejection of care. Avoiding perceived threatening information or turning towards distracting information, also called “blunting”, is a documented behavior within medical contexts (Case *et al.*, 2005; Rood *et al.*, 2015; Van De Wal *et al.*, 2023).

Strategic non-disclosure is the “intentional withholding of information” (Broussard, 2024, p. 2) to obtain health information, support and care. Broussard (2024) found that goals of physical safety and concerns about medical surveillance were among individuals’ reasons for strategic non-disclosure in the context of seeking abortion care. For some individuals, information avoidance and strategic non-disclosure may work in tandem as they navigate various relationships amidst a challenging information and legal landscape. When reliable information is scant and the legal landscape tenuous, as in the context of this study, information avoidance and strategic non-disclosure may play a significant role in some individuals’ information seeking and assessment practices.

#### *Cannabis use in pregnancy and lactation*

Information regarding cannabis use in pregnancy and lactation is limited and, often, contradictory. While cannabis has been consumed medicinally for millennia (Chaachouay *et al.*, 2022), research is scant compared to other areas of medical scholarship, with most studies focusing on harms or misuse rather than potential medicinal uses or weighing risks and benefits (O’Grady, 2020). As a result, academia lacks a comprehensive body of literature assessing the risks and benefits of cannabis use in pregnancy or lactation. With the more recent legalization of cannabis for medicinal and recreational use in Canada (Health Canada, 2022) and 23 American states (National Conference of State Legislatures, 2024), there is a growing need for cannabis research focusing on possible medicinal uses, as well as studies exploring the risks and benefits of use in combination with various medical/physiological conditions, such as pregnancy. Some scholars posit that the study of controversial topics, such as cannabis use in pregnancy, allows for the development of social policies and information healthcare decisions that are truly evidence-based rather than opinion and conjecture (MacDuffie *et al.*, 2020). Currently, available research is still extremely limited and, ultimately, inconclusive.

Existing literature has identified several potential negative developmental outcomes that have been linked to in-utero cannabis exposure. These include low birthweight, stillbirth, need for neonatal intensive care, pregnancy complications for the gestating parents and congenital abnormalities (Eichorn *et al.*, 2022; Grant *et al.*, 2020; Gunn *et al.*, 2016; Lo *et al.*, 2022; Metz and Stickrath, 2015). However, reviews note that current scholarship is unable to clearly identify a causal link between cannabinoid exposure during gestation and the stated negative outcomes in humans. Eichorn *et al.* (2022) note that some studies are limited by their reliance on participants’ self-reports, which may magnify bias and result in an underestimation of cannabis use. Other scholars have conducted research on rats or mice, making their results of limited transferability to human physiology (Grant *et al.*, 2020; Lo *et al.*, 2022).

The primary limitation of extant human-based studies is the presence of other confounding factors—particularly observed study participants’ use of other drugs and substances (Conner *et al.*, 2016; Jaques *et al.*, 2014; Little *et al.*, 2021; Passey *et al.*, 2014; Paul *et al.*, 2021;

Ryan *et al.*, 2018). Scholars have noted that confirming the direct effects of cannabis on pregnant bodies is consistently challenged by the presence of covariates that not only include other substances but also social determinants of health such as socio-economic status and poor nutrition (Jaques *et al.*, 2014).

Much existing research remains inaccessible to the public. Many academic papers exist behind paywalls, resulting in economic barriers for many. Barriers to access may lead individuals to rely on non-academic, potentially less reliable, sources of information while relying on active sensemaking, satisficing and other information behaviors to support their health decision-making. This is evidenced by the rise of the Internet as a tool for informal information-seeking practices, as discussed previously, including the use of online message boards and community forums as information sources (Artieta-Pinedo *et al.*, 2018; Song *et al.*, 2012). Amidst inconclusive and, sometimes, contradictory clinical scholarship, researchers have found that individuals continue to make deliberate and intentional decisions about their cannabis use during pregnancy and lactation (Vanstone *et al.*, 2021). These decisions are complex, resulting from many considerations, including pre-pregnancy cannabis use habits (Chang *et al.*, 2019), financial cost (Mark *et al.*, 2017), level of social and relational support (Gray *et al.*, 2010), and perceptions of personal benefits of use (Bartlett *et al.*, 2020; Coy *et al.*, 2021). Given the lack of conclusive evidence about the risks and benefits of cannabis use during pregnancy and lactation combined with the knowledge that individuals are still making active decisions about cannabis use while pregnant or lactating, research seeking to better understand individuals' experiences of information seeking, assessing and use in challenging contexts is vital for improved healthcare experiences, outcomes and clinical guidelines.

## Methods

This research applied reflexive thematic analysis (RTA) (Braun *et al.*, 2022) to 23 interview transcripts with individuals who had considered cannabis use while pregnant or lactating. Interviews for this study were conducted in Massachusetts, USA, for a previous study that aimed to explore how state-level cannabis-related policies affected informed decision-making in individuals considering cannabis use while pregnant or lactating (English and Greyson, 2022). Overarching themes developed through RTA grounded the development of a novel information behavior model of ET, a major contribution of this work to LIS. Intersectionality is a Black feminist framework that seeks to articulate how various social concepts (such as race and gender) interact, resulting in new and expansive experiences of oppression for those who experience intersecting and overlapping identities (Crenshaw, 1991). By grounding this work in intersectionality, this analysis recognizes that the ET practices of each study participant were shaped by their individual and complex identities as well as their interpretations of medical and legal information that they encountered. The Institutional Review Board of the University of Massachusetts Amherst provided ethical approval for the original study, including data collection from human participants (#1743 2019–5810). The Behavioural Research Ethics Board of the University of British Columbia provided ethical approval for this secondary analysis (#H22-03506).

## Legal context

Within the US, cannabis is federally classed as a “schedule 1” drug, a status reserved for substances with alleged “high abuse potential with no accepted medical use” (Lopez *et al.*, 2024). However, some states have developed and implemented laws and policies that make cannabis purchasing, possession and use legal within certain parameters (e.g. for medical use with a prescription). The General Court of the Commonwealth of Massachusetts (2026a) states that an individual practicing personal use of cannabis, within specified restrictions, is not to be “prosecuted [or] sanctioned.” The spirit of the law allows for personal use and possession of small quantities of cannabis in various forms while still prosecuting unregulated cannabis

distribution and trafficking; cannabis is still subject to wrongful use, possession, distribution and importing laws ([The General Court of the Commonwealth of Massachusetts, 2026b](#)).

Though the existence of these state laws may suggest a clear-cut drug policy for citizens to abide by, cannabis users are often left alone to navigate areas relating to drug use that remain legally ambiguous, such as consumption of cannabis while pregnant. Pertinent to this study are questions of child endangerment and parental responsibility regarding drug use and child rearing. Pregnant and lactating people in this setting have struggled to navigate the ambiguous legal landscape; some individuals have healthcare providers who support cannabis use or maintain neutrality, while others experience drug testing of themselves and their newborns with the involvement of child protective services (CPS) in the postpartum period ([English and Greyson, 2022](#)). These challenges are compounded for individuals who are racialized or otherwise systemically marginalized. This ambiguity creates a challenging legal, informational and social environment for individuals to adequately meet their information needs regarding prenatal and postpartum cannabis use.

### *Study setting and participants*

Data were collected in Massachusetts in 2020. At the time of data collection, Massachusetts had an estimated population of just over 7 million with a population growth of around 500,000 people within the previous decade ([US Census Bureau, 2021](#)). Within the state, cannabis became legal for medicinal (prescription) use in 2012 and recreational (non-prescription) use in 2016 ([Temescal Wellness, 2021](#)). Even so, the state still lacked clear legislation on whether prenatal cannabis use could be considered child abuse or neglect.

Participants ( $n = 23$ ) ranged in age from 20 to 44. Most participants lived in Central or Eastern Massachusetts and were experiencing their first pregnancy or child. Many participants (74%) were previous cannabis users and continued use during pregnancy and/or lactation; 13% of participants were previous users and discontinued use while pregnant or lactating. Two participants (9%) were previous users and limited their use to only cannabidiol (CBD) products, and one participant (4%) was undecided at the time of their interview. Most participants ( $n = 21$ ) described being in a heterosexual relationship, though sexual orientations were not clearly disclosed except for one participant who self-identified as “queer” in her interview. Similarly, most participants did not clearly disclose ethnicity or race, except for two participants who self-identified as Latiné. Due to privacy concerns related to the tenuous legal status of cannabis in their setting at this time, detailed data on participant location, race/ethnicity, or sexual orientation were not systematically collected.

### *Data collection*

Recruitment was initially conducted through clinics and other spaces where pregnant and postpartum people would frequent. Only a few weeks into recruitment, the COVID-19 pandemic was declared, halting the study until researchers could obtain revised ethical approval for online recruitment. Upon relaunch, recruitment was conducted through Facebook posts and targeted online advertising. Data collection was conducted from May to August 2020 through audio-recorded phone interviews that lasted approximately one hour. The researchers opted to end data collection once they felt they had enough data to sufficiently answer their research questions in alignment with Malterud and colleagues’ framework of “information power” ([Malterud et al., 2016](#)). The “power” of qualitative data can be established in smaller sample sizes if the study aim is narrow, the participants’ experiences relate to the study topic, and the dialogue between researchers and participants is unambiguous and focused on the research topic. All interviews were conducted by the same researcher and covered each participant’s current/recent pregnancy and postpartum, history of cannabis use and cannabis-related decisions in pregnancy and lactation, information sources and opinions about state-specific policies regarding cannabis legalization and sales. Each participant was assigned a pseudonym, used when quoted in this study. Drawing upon a harm reduction approach, the

researchers acknowledged the inherent complexity of the discourse surrounding cannabis use while simultaneously attempting to identify paths forward to reduce potential harms (Inciardi and Harrison, 2012).

### *Data analysis*

This study used qualitative coding grounded in RTA (Braun *et al.*, 2022; Braun and Clarke, 2022). Coding began deductively with an existing codebook developed during the previous study, applying codes relating to information behavior and information sources. Further analysis used inductive coding and was completed in two phases that applied themes and foundational questions from each previous phase. Final themes and observations were used to develop an information behavior model of ET.

Research methods that incorporate reflexivity, such as RTA, require researchers to consider and name their own positionality in relation to the research topic (Robinson and Wilson, 2022). Reflexivity can help the researcher better understand the ways by which their own biases, values and background shape their inquiry (Meyer and Willis, 2019). The author team includes people who have and have not experienced pregnancy and birth. One author has previous experience as a birth doula. The author team also includes those who do and do not live with White privilege and who have and have not lived in the state of Massachusetts, where data were collected. Some authors live with chronic illness and identify as disabled.

## **Results**

### *Introduction to overarching RTA themes*

Applying the deductive codebook revealed that active information assessment was an ever-present activity for most participants as they sought information and made decisions within their personal contexts. Inductive analysis showed that many participants relied on personal experience, intuition and the experiences of others as key information sources. In addition, participants often rated information by importance and relevance while simultaneously considering an information source's perceived trustworthiness; many participants heavily relied on what they considered to be trusted information sources established through relationship building. RTA resulted in four overarching themes that address this study's research questions:

- (1) Information needs regarding cannabis use in pregnancy and lactation are complex and contextual
- (2) Many information behaviors combine to contribute to the iterative behavior of ET
- (3) ET is a complex process that is often relational and intuitive
- (4) Decisions that result from ET remain dynamic and contextual, reflecting the complexity of the individual's original information need(s)

### *Theme 1: information needs are complex and contextual*

Within this study's population, information needs were broad at the population or group level and contextual and specific at the individual level. Identified information needs were also complex and challenging to address. Participants' information needs varied in specificity and focus. Identified information needs across the dataset ranged in topic from the legalities of potential cannabis use in pregnancy to the developmental outcomes of cannabis use for the fetus in pregnancy. At the individual level, information needs were specific and strongly linked to the context within which participants found themselves. Even when multiple participants voiced questions relating to the same topic (e.g. cannabis use while lactating), each participant

had unique questions based on their context. For instance, Jamey had multiple questions concerning breastmilk:

I guess the question would be, does it affect him? Is he getting a secondary high through the breastmilk? (Jamey)

Olivia, however, dealing with a premature baby, had different questions concerning the same topic:

I think the biggest question I had was how long it would stay in my breastmilk and how much should be in the breastmilk because I didn't want it to be too much while he was in the NICU. I didn't want it because I didn't know how it would affect a preemie. (Olivia)

It is unclear from Olivia's transcript whether her question was solely regarding the health of her baby and the impact that tetrahydrocannabinol (THC) in the breastmilk may have on him, or whether there were also legal concerns about having breastmilk with THC present in the hospital and/or increased surveillance of parenting a NICU baby. Jamey and Olivia's information needs illustrate how complex and contextual even similar-seeming information needs regarding cannabis use in pregnancy and lactation can be. While information needs across the entire participant group covered a broad range of topics, individual needs were specific to the emotional, physical and legal contexts that surrounded each person.

#### *Theme 2: many information behaviors contribute to Everyday Triangulation*

While initial qualitative coding revealed that many information behaviors were used by this study's participants to address their information needs, RTA further revealed that ET combined many information behaviors in an iterative way in response to an individual's complex information need. Isabel dealt with significant morning sickness, back pain and insomnia during her pregnancy. When asked what her main sources of information regarding health in pregnancy were, Isabel named her OBGYN, the doctor's office, friends and her broader social network. In addition to information encountering, Isabel also described active information seeking from various sources, saying "I speak to a lot of people at primary care, and I look a lot of things up online," (Isabel). Marisa described an "informed but relaxed" approach to her pregnancy. She, like Isabel, sought out various information sources, including online mommy groups, podcasts and birthing videos. She also described clear instances of information assessment while triangulating information from multiple sources:

I got a lot of advice from family members, and I would take their advice with a grain of salt and kind of do my own research about it because I wonder if, are these hand me down information from elders, or is it coming from a place of information? Is it – what's the word? – anecdotal. So just, yeah, a bunch of those conversations with a heavy weight of skepticism. (Marisa)

Marisa encountered information through advice given from family and friends. She also actively sought information and described trying to balance her research with her own beliefs, prior education and needs while also actively assessing the information and sources that she came across:

I would say I was very skeptical because there's not enough research on using [cannabis]. And not just pregnancy, but overall. But what I do know is that with my history of mental illness is that using antidepressants is also not that great for a developing fetus or—but so isn't anxiety, stress, or depression. So I kind of—that's why I would restrict as much as I would use, but also make sure that I wasn't falling into any unhealthy state because I know that wasn't healthy either. So it was trying to balance all my beliefs or my education and trying to be as informed as I could be. (Marisa)

Marisa self-identified as Latiné in her interview—being a racialized person affected her ability to seek and share information regarding cannabis use in pregnancy. In addition to her descriptions of active information seeking, assessing and encountering, Marisa also described

withholding information from her healthcare providers in fear of being racially profiled and avoiding information once she had assessed the available information and deemed it insufficient:

We really minimized my ability to ask professional[s]. Like I said in the past, I've done social work, and I know that as a Latina, I could be racially profiled. I'm very scared of that. So that also affected my willingness to ask. (Marisa)

Marisa's information needs relating to cannabis use in pregnancy were left unmet, despite her efforts and use of multiple information behaviors within a larger ET process. Marisa's story illustrates the use of strategic non-disclosure. While she used strategic non-disclosure as a protective behavior against medical surveillance, other participants used information avoidance as a protective behavior instead. While in a noticeably different context from Marisa, Isabel also described navigating challenging and complex social environments while seeking information from a wide range of sources:

A lot of people [in the online parenting groups] messaged me privately about it [cannabis use in pregnancy] and shared their feelings when they did it. Other than that, I just sort of had a lot of negative feedback from people who really never even tried smoking before they were pregnant . . . So that was hard. (Isabel)

For some participants, information overwhelm and a general lack of satisfactory information led to information avoidance. Information avoidance within earlier phases of an individual's ET would lead some to triangulation that more heavily depended on their intuition and immediate needs. Marisa's story, and its variation from other participants' described behaviors, illustrates how ET is an iterative process that combines multiple information behaviors in response to complex information needs.

### *Theme 3: Everyday Triangulation is complex, relational and intuitive*

The experiences shared by participants in this study revealed that ET is a relational and intuitive process. These characteristics distinguish ET from forms of triangulation within formal academic contexts. Christina's experiences of information seeking and decision-making relied heavily on relationship building between her and her care providers. She described withholding information about her cannabis use from some medical providers who were "kind of on a teetotaler side of things" and told her, "You should not smoke [cannabis] because it is actually bad for your anxiety," which she did not agree with. However, when she found a "wonderful" medical provider who took more of a harm reduction approach, she felt more rapport. Based on Christina's personal medical history, this provider suggested Christina use cannabis in a way that didn't involve smoking. Ultimately, Christina described feeling confident in her decision to use cannabis while pregnant, with her only hesitation being the unknown role that CPS might take after the birth. Eventually, she drew upon the shared experiences of her friends, family and peers, and felt confident in the knowledge that her use was legal at the state level:

I knew that my sister had partaken a few times during her pregnancy. I have former friends who smoked heavily throughout their pregnancy and have wonderful children who I adored. I think just knowing that kind of helped solidify. [I feel] pretty solid [about my decision] . . . If they [CPS] do choose to open an investigation which I understand is their policy and would try not to take it personally . . . And I'm still just like, "No, it's legal." I have had multiple people assure me that they're okay with it. I'm okay with it. Yep, this is happening. (Christina)

While Christina's ET practice relied heavily on interpersonal relationships and building rapport with information sources, other participants described a notable reliance on intuition and gut feelings to reach a decision. For instance, Willow described "looking inward" as a vital practice in her decision-making and parenting journey.

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It was really difficult at first because I was in such an unknown territory. The decision-making process was hard, but I think it took a lot of inward—looking inward at myself and making an actual decision, which I think was a good exercise, because I think that, as a parent, that's all of the decisions you make for your kids. (Willow)

Similarly, Olivia used her “gut” to reach a decision considering the limited amount of information she was finding:

I mostly just went with my gut. If I felt like it was going to be okay for my son, then I tried it. (Olivia)

Willow and Olivia's experiences reflect many study participants' experiences of gut feelings and intuition playing a pivotal role in their ET practice. Christina's experience also reflects that many study participants relied on previously or newly established trustworthy relationships between themselves and key information sources, including primary care providers. For many participants, their processes of ET relied not just on the validity of the information they were encountering and accessing, but on their trust in information sources. This relational aspect of ET, along with the common use of intuition and embodied experiences as relevant and important pieces of information, makes it distinct from other forms of triangulation.

#### *Theme 4: complex information needs lead to complex and dynamic decisions*

ET was used in response to complex information needs that were challenging to address with available informational resources. In addition, complex information needs led to equally complex and often dynamic decisions. Bridget's personal context was complicated by her methadone treatments, a daily oral opioid medication used to treat opioid addiction (CAMH, 2025); this resulted in several distinct types of decision-making throughout her ET process. Like many study participants, Bridget described making temporary and dynamic decisions; some of these were utilitarian in nature and made in response to an immediate pragmatic need. Bridget described her decisions as being dynamic and temporary because she felt pushed to decide based on symptoms, mainly severe nausea, that she needed to address, but she did not have enough information to adequately address her underlying information needs about the possible risks and side effects of using. This resulted in Bridget reconsidering earlier decisions as she came across new information:

I was taking a few hits of marijuana because it was the only way I could eat . . . But now, I haven't smoked in like two months, and I don't plan on it because I don't want my baby to test positive because the state will get involved, and it's just a thing I don't want to deal with. (Bridget)

Bridget made decisions regarding cannabis use that changed as she progressed through her pregnancy, a practice reflected in many study participants. Bridget's situation was further complicated by experiencing social stigma related to her methadone treatment:

I know I already have the methadone issue, so it's just easier to not give them another reason [to involve child protective services]. (Bridget)

Social stigma and legalities were common concerns across study participants. Shifting legal circumstances led some participants to change their minds or actions over time. The complex and overlapping needs regarding cannabis use while pregnant or lactating within specific legal contexts led to participants making dynamic and complex decisions that changed in response to their shifting contexts.

#### *A new model of Everyday Triangulation*

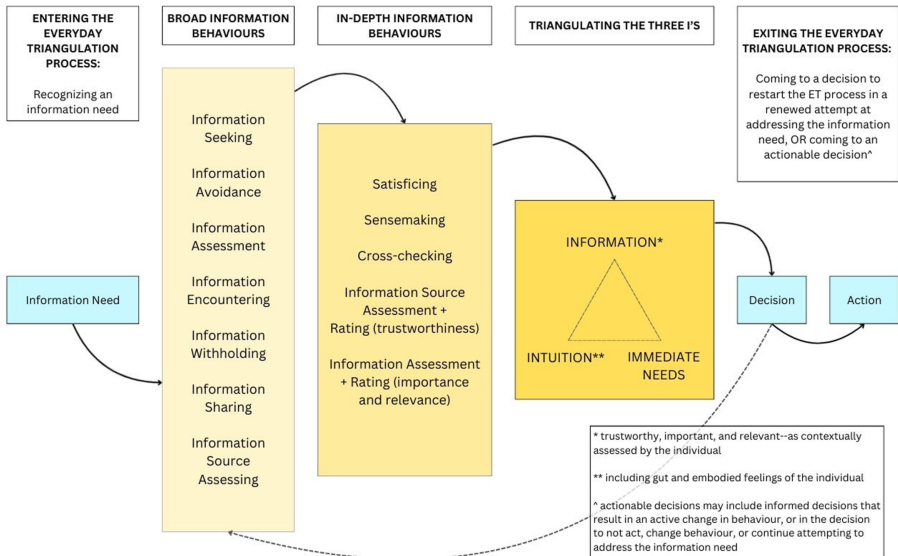
Based on study findings, an information behavior model of ET was developed. In this new model, ET is a layered, iterative process that combines many information behaviors and results in the triangulation of the three I's: *Information* that has been deemed trustworthy, important

and relevant; *Intuition* and gut feelings of the triangulating individual; and the *Immediate*, pragmatic needs of the individual.

The model (Figure 1), moving from left to right, takes the shape of a funnel to illustrate ET as an in-depth process that begins with broader information behaviors and deepens through more specific information behaviors toward the active triangulation of the three I's, resulting in a decision. Individuals move through the process at different paces and perform different combinations of information behaviors that lead to the core behavior of triangulating the three I's.

ET can be split into five phases: recognizing an information need, broad information behaviors, in-depth information behaviors, triangulating the three I's and decision leading to action or cycle re-entry. Several well-established information behaviors are integrated into ET; as individuals sensemake and reach a level of satisfaction with their encountered information, they move towards an active triangulation of the three I's, further through the ET process.

The five phases of this model may be navigated at different speeds and intensities. Especially in instances where available information on a topic is lacking (such as cannabis use in pregnancy), an individual may spend less time and energy on broad information behaviors and spend more time engaging with the little information they find by using in-depth behaviors such as "information importance and relevance assessment and rating". Further application of this model is necessary to test model fitness in different contexts and populations. For instance, application of this model may not be appropriate in populations where individuals are seeking information that will justify their already chosen actions. While participants in this study demonstrated very nuanced triangulation of the three I's, other contextual applications of this model may reveal a clear prioritization of one "I" over the others for active decision-making. Further exploration of how the three I's may be weighted and prioritized differently in some populations and contexts is needed.



**Figure 1.** Information behavior model of Everyday Triangulation

## Discussion

### *ET among established information behaviors*

While ET is notably different from formal academic research, it does share academic research's characteristic as a sensemaking process. ET, no matter how informal, requires some level of research; this means that ET must also be a sensemaking process. While sensemaking in a formal research context requires "a more systematic approach to identifying gaps" (Zhang and Soergel, 2014), sensemakers conducting ET take a less formal approach. Individuals may simply encounter an information need based on their contextual circumstances, such as finding out they are pregnant, rather than conducting formal, systematic research.

This study also demonstrated how satisficing was a key information behavior performed within ET. While the context of this study is different from previous scholarship, several parallels can be drawn that establish satisficing's important role in ET. While some students in Prabha *et al.*'s (2007) work stopped their information-seeking as soon as they reached some quantitative metric (e.g. finding a minimum number of academic sources for an assignment), other students stopped their research once they were satisfied with the quality and validity of the information that they found. This study found that individuals within a challenging legal and information landscape were more likely to use a qualitative metric to inform their satisficing within their wider ET process. Qualitative measures, such as perceived trustworthiness of the information source and affirming of intuition that participants experienced and sought, were often at the core of a participants' decision to trust and use certain pieces of information. For individuals to have enough trustworthy, important and relevant information to triangulate against their immediate needs, intuition, sensemaking and satisficing are used to move through the information landscape.

The extent to which an individual will participate in ET will depend on their mental, emotional and social capacities as they search for and share information. Medical- or health-related information needs may be experienced by individuals as novel and urgent. These newly arising information needs may also be identified at a time when an individual is dealing with additional factors that may reduce their general, emotional and/or physical capacity. Pragmatically, this means that individuals may find themselves with novel medical information needs at a time when their own capacity for increased information seeking is low. These limitations may lead individuals to participate in information behaviors, such as ET, to meet their needs within the confines of their contextually affected capacities.

### *Study implications*

The information needs of those considering cannabis use while pregnant or lactating are broad at the population level, specific and contextual at the individual level and largely unmet by existing information resources. Several areas in need of further research were identified. Among this study's participants, there was a huge appetite for conclusive research about the risks and benefits of cannabis use while pregnant and lactating. Congruent with current scholarship (Conner *et al.*, 2016; Eichorn *et al.*, 2022; Jaques *et al.*, 2014; O'Grady, 2020), study participants reported significant limitations in available research, which affected their ability to use current research to inform their decisions. This study illustrates the importance of creative and accessible knowledge translation that meets the information needs of target communities. Further clinical research regarding cannabis use in pregnancy is paramount, as are interdisciplinary efforts to ensure that future research reaches populations it intends to serve.

Information scientists can play an important role in creating suitable and relevant resources regarding cannabis use in pregnancy and lactation. While increased clinical research is necessary, information scholars must work to develop resources that address the broad scope of this population's information needs while simultaneously offering pathways for individuals to address their specific, contextual queries.

ET includes a variety of overlapping information behaviors when credible information regarding a topic is scant, contradictory, or completely lacking. This study revealed that information avoidance can play a significant role in an individual's ET process if the individual experiences information overwhelm or information anxiety during the information-seeking phase. Information scientists who seek to produce new resources and health communications regarding cannabis use in pregnancy and lactation must actively mitigate the possible experience of information overwhelm and anxiety. Understanding that ET is an iterative and nuanced process that is unique for everyone is an important starting point for addressing the information needs of an entire population. Information scientists must consider the following when producing resources relating to cannabis use in pregnancy and lactation:

- (1) Mitigate information overwhelm by consolidating information in a way that is accessible to a non-academic population.
- (2) Incorporate information-seeking pathways that allow individuals to address their specific information needs while meeting the broader information needs identified across the whole population.
- (3) Work collaboratively with clinicians and public health officials to support patients' ET, understanding that individuals are not only using traditional forms of information to make health decisions. Help clinicians to understand that patients seek a satisfying decision based on information, intuition and their ability to address their immediate needs.
- (4) Increase a culture of information sharing and nonjudgemental information seeking. Many study participants felt judged or limited in their information search due to legal constraints and social stigma. For adequate information seeking to take place within the ET process, individuals must feel free to satisfice and sensemake for as long as necessary before participants in their core ET practice.

#### *Strength, limitations and future work*

This study has one main limitation and several strengths. Due to institutional ethics limitations on data collection, detailed demographic information was not available. Lack of demographic information limits the active application of intersectional analyses. However, this study offers multifaceted contributions to information science, including theoretical, methodological and pragmatic applications. A theoretical model was developed, applied to a specific use case, and proposed for further application in future information science research. Qualitative methodologies were robustly applied to the same use case, resulting in RTA themes that could be explored in future research with alternate populations. This study offers pragmatic directions for future research within information science and public health, including clear recommendations for supporting individuals as they seek information within challenging informational and legal contexts.

#### **Conclusion**

When information regarding a particular health topic is conflicting, inconclusive, or generally lacking, individuals may participate in a complex combination of information-seeking and assessment behaviors. In the context of this study, ET allowed participants to respond to their unique information needs while considering their personal context, intuition and immediate pragmatic needs. As information scholars better understand this ET process, and as ET is applied to various populations and contexts, information resources and support can be better designed, in collaboration with public health professionals, to support the needs and

challenges of each population in question. Future scholarship applying ET to additional populations is a promising pathway towards better understanding the information use practices within everyday contexts where information is lacking or challenging to engage with.

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**Corresponding author**

Maria Mulder can be contacted at: [maria.mulder@ubc.ca](mailto:maria.mulder@ubc.ca)