

Teen Reproductive Health Information Seeking and Sharing Post-Roe

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ABSTRACT

It has always been challenging for teens to access consistent and reliable information about their reproductive health. But we know little about the impact of recent changes to laws governing sex education and the right to abortion on teen reproductive health information seeking and sharing. We conducted interviews with 15 teens, finding that, post-Roe, teens are concerned about risks to their reproductive health data, particularly as it relates to what they search and share on social media and period tracking apps. Different assessments of risk related to sexual activity, state laws, social context, and cultural and family values dictate information practices. But social risk (like being harassed or doxxed) is the biggest driver of information seeking and sharing practices among mostly non-sexually active teens. We describe the complexities of teens navigating reproductive health post-Roe and offer some guidance about teen technology and privacy literacy.

CCS CONCEPTS

• **Human-Centered Computing** → **Human Computer Interaction (HCI)**; *Qualitative analysis*; • **Security and Privacy** → Human and societal aspects of security and privacy.

KEYWORDS

Teens, reproductive health, behavior change, privacy

ACM Reference Format:

Umama Dewan, Cora Sula, and Nora McDonald. 2024. Teen Reproductive Health Information Seeking and Sharing Post-Roe. In *Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '24)*, May 11–16, 2024, Honolulu, HI, USA. ACM, New York, NY, USA, 12 pages. <https://doi.org/10.1145/3613904.3641934>

1 INTRODUCTION

Sex education is an increasingly fraught topic in the U.S. Teens require access to comprehensive, unbiased, and evidence-based information, education, and services that promote their long-term sexual and reproductive health and well-being, but it is becoming harder to get in school [21] and even online [59], without fear of legal repercussions.



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CHI '24, May 11–16, 2024, Honolulu, HI, USA
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ACM ISBN 979-8-4007-0330-0/24/05
<https://doi.org/10.1145/3613904.3641934>

While in the latter half of the last decade, we saw an increase in access to reproductive health information, education, and services for teens in the U.S., that access has always been uneven, with certain states passing laws that undermine education and privacy for teens pursuing these resources [7]. Since the *Dobbs v. Jackson* Supreme Court decision that overturned the right to abortion guaranteed by *Roe v. Wade*, teens (as well as anyone who can become pregnant) are facing further restrictions and uncertainty around abortion access and related healthcare information. The removal of abortion care policies has particularly adverse effects on the health and well-being of marginalized adolescents, specifically manifested as heightened health risks, mental health challenges, and increased experiences of stigma and discrimination [5, 80]. Thus, while it may have always been somewhat challenging to get accurate, safe, or private sex education for youth [58], now, more than ever, teens face challenges to their reproductive health privacy post-Roe.

Given the uncertainty around abortion laws and accompanying changes in what teens can learn and share [67], it is critical to understand online and offline sources that teenagers are turning to [41], as well as the effectiveness and safety of the information obtained from these sources [58]. Additionally, the abortion bans that are increasingly adopted in States in the U.S. have raised concerns about privacy [28, 32, 51, 57] and have had chilling effects on technology use for people who are, or may become pregnant [45]. Some questions that emerge in this new environment are whether this post-Roe landscape has a chilling effect on teens' reproductive health information seeking behavior, as well as what types of information and privacy strategies teens employ to mitigate potential harms.

In an attempt to gain insight into how teens are coping with reproductive health education and uncertainties in the post-Roe era, we conducted qualitative interviews with 15 teens across the U.S., exploring the sources teens rely on for reproductive health information and the repercussions of the *Dobbs v. Jackson* ruling on their preferences and attitudes towards the type of information they seek and where they seek it, as well as their communication and privacy concerns and strategies while seeking such information.

We find that teens are concerned about their reproductive information seeking and sharing practices, and this concern is primarily related to social repercussions, as well as the laws in their state. While many express concern about what they search and share online, a risk they more readily associate with social repercussions like being harassed, doxxed, or disagreeing with a family member or friend, those in restrictive states are also quite concerned with the surveillance risks associated with their use of technology.

Among the youngest cohort (i.e., 13-15), relative distance from the age of sexual activity and its consequences not only reduces privacy concerns but also leaves them defaulting to the values and

norms of their parents. Ultimately, social risk, rather than legal risk, is a bigger driver of privacy decisions. Even among those who are concerned enough about the privacy of their health data to consider specific privacy strategies (e.g., for period tracking data and online searches), they may not consistently implement these strategies if they are not sexually active and perceive the risk as acceptable.

This paper makes the following contributions: First, it contributes to filling gaps in the literature about online reproductive health information seeking practices of teens, particularly as they relate to a broader definition of reproductive health literacy. Second, it offers an early look at the consequences of overturning *Roe v. Wade* on teen reproductive health information seeking and sharing in terms of what data they protect and what they look for and share online. Building this knowledge is particularly critical given the dramatic changes in attitudes towards sexual health and identity among younger generations [74]. Informed by insights about technology experiences and the "literacy" of teens, this paper concludes with some guidelines for HCI researchers and advocacy organizations who aim to support teen reproductive health.

2 RELATED WORK

In this section, we first define reproductive health and menstrual literacy. Then, we discuss reproductive health education in the U.S. and its shortcomings. We then look at what we know about how teens seek reproductive health information online, what challenges exist, and the gaps in the literature. Then, we turn our focus to reproductive information seeking post-*Roe* in light of the heightened risk associated with reproductive health apps. We conclude this section by turning to studies in other cultures where reproductive health has traditionally been stigmatized to various degrees. Given the changing climate for abortion (and gender-affirming care) in the U.S., we may find more in common with other cultures than before.

2.1 Reproductive Health Literacy Definitions

According to the World Health Organization (WHO), reproductive health encompasses overall "physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and its functions and processes" [78]. The WHO is concerned not just with reproductive capabilities but also "the freedom to decide if, when and how often to do so," emphasizing the importance of having the ability to make *informed* decisions about one's reproductive health.

An important component of reproductive health is menstrual literacy. Eschler et al. define menstrual literacy as having "a baseline of knowledge and skills for understanding anatomical and biological facts of menstruation, caring for the menstruating body, and completing menstrual care tasks" [23]. This paper draws on this broader framing of reproductive health as encompassing knowledge or literacy about one's reproductive system, particularly one's menstrual cycle, and effective contraception, which is critical to making informed decisions to guide the analysis.

2.2 Teen Reproductive Health Education in the U.S.

In the U.S., reproductive health education for teens varies significantly from state to state due to local and school district policies, as well as parental preferences. It is the subject of never-ending controversy and debate. First, the requirement for sex education is itself variable, with some states requiring sex education and others allowing districts to decide whether they want to provide it at all [30]. Where it is necessary, sex education varies widely across the country in terms of content and quality [30, 33, 36]. That said, sex education in the U.S. is mainly split into two approaches: abstinence-only-until-marriage (AOUM) [63] and comprehensive sex education (CSE) [26].

Approximately half of the adolescents (aged 15-19 years) in the U.S. receive sex education that meets the minimum standard outlined in current national goals [40]. A significant number of adolescents either do not receive instruction on crucial reproductive health-related topics such as puberty and the physiological changes associated with it, effective contraceptive methods and their usage, the significance of practicing safe sex to prevent sexually transmitted infections (STIs), and the importance of healthy relationships and consent; or receive it only after their first sexual experience [40]. Moreover, these gaps in sex education are uneven, with gender, racial, and other disparities being widespread [40, 64]. This underscores the necessity to address not only the biological aspects of sexual health but also the broader societal and systemic influences that shape adolescents' experiences and understanding of their own sexuality. Sexual health education can promote a more equitable and inclusive environment for all youth, fostering informed decision-making and well-being [64].

Access to reproductive health education in the U.S. does not necessarily encompass the broader definition of knowledge that equates to choice. Our research is particularly concerned with whether teens pursue that knowledge elsewhere (particularly online) and if the avenues for discovery are hampered by recent events.

2.3 Teen Reproductive Health Information Seeking Online

Reproductive health education in classrooms remains deficient, and many curricula still perpetuate stigma and sex stereotypes among adolescents. A recent study suggests that teens often turn to internet sources over doctors, parents, and teachers to get information regarding reproductive health [3, 13]. Most often, they are turning to Planned Parenthood for information about reproductive services (including abortion), and it has sites dedicated explicitly to teen reproductive health. However, the study also finds that teens struggle to recall where they go or vaguely remember Google and social media platforms [13].

Thus, with the widespread usage of internet technologies among teens in the U.S. and worldwide, sexual health information has become more accessible [11, 60, 76]. But there is still a need for more comprehensive, accessible, and *local* sex education that teens can navigate in a divisive and variegated educational and legal climate, leaving a gap to be filled by technologies—including social media, which may be addressed through the integration of technology into educational approaches [71].

Menstrual tracking is one important way that adolescents learn about their reproductive health. Yet Eschler et al. find that many popular period tracking apps fall short of providing this kind of literacy, particularly for teens and Gen Z users [23]. The question remains: where do teens go for reproductive health information, and how does it contribute to their reproductive literacy?

Other research on reproductive health education, although not about teens, is instructive in emphasizing the way that reproductive health learning can be as much, if not more, a social experience as a bodily one [16, 38]. It's important for any study investigating teen reproductive health information seeking behaviors to take a holistic approach, examining how lived experiences, culture, and social relationships influence their pursuit of online reproductive health information. Even while teens may be increasingly turning to online sources that provide local and possibly contextualized knowledge [3, 13], we don't know what prompts them to seek this out, whether it is indeed correct or adequate or the social context in which it is received and understood.

2.3.1 Misinformation and Privacy Concerns. Online sources for reproductive health may offer a wide array of information suited to teens' interests and concerns [13]. But they also come with certain risks, such as inaccurate or misleading information, lack of credible sources, cyberbullying and stigmatization, exclusivity of gender-diverse youth, limited interaction with healthcare professionals, exposure to inappropriate content, online harassment, and the potential chilling effects of new laws governing sexual education and expression, along with restrictions on abortion [24, 39, 58].

Online activities can leave digital footprints that may impact individuals' privacy and security [20, 44, 79]. Moreover, the privacy threats faced by these vulnerable populations of teens seeking reproductive health information may not be fully grasped or given priority by those designing technologies [46, 47]. Still, the extent to which (if at all) the overturning of Roe has heightened awareness of these online risks and/or created challenges to finding reliable information is unclear.

2.4 Reproductive Information Seeking Post-Roe

The overturning of Roe v. Wade has brought attention to significant deficiencies in data privacy in the U.S. [28]. Reproductive health technologies are notorious for selling information to third parties like Facebook and Google [15]. The sensitive data gathered by fertility tracking apps is disseminated without users' awareness or consent, posing significant potential risks, particularly in a post-Roe era [4, 6, 12, 50]. This unauthorized sharing of intimate information could lead to substantial harm and prosecutorial risk [34, 54, 62].

The privacy concerns of menstrual apps in particular [66] were, in the aftermath of Roe v. Wade, cast in a new light of legal risk [25, 68], changing the way that people view them [53] and causing many to delete them [45]. Of course, we know that there are reasons to be concerned about other data associated with reproductive activities, including location data [18], search histories [27, 70] as well as conversations had over social media and messaging apps [34, 62]. This raises important questions about how we think about solutions for teens who may very well struggle with protecting themselves against the privacy harms associated with reproductive

health apps [49] and may not be informed about the broader risks of using any technology in this ever more complex terrain.

2.5 Reproductive Health Information Seeking and Literacy in Other Cultures

Studies on reproductive health from other cultures are particularly instructive, given that recent changes in U.S. law have further stigmatized and increased the risks associated with reproductive health.

Drawing on Kumar et al.'s guidance that we take the "long, holistic, and intersection view" [37] to study reproductive health information seeking, we turn to work on reproductive literacy in India to understand how reproductive learning is accomplished in stigmatized contexts. In their study of menstrual tracking practices, Tuli et al. [73] found that few teens actually track their periods but do overwhelmingly turn to their mothers for guidance about their periods. Tuli et al.'s other work has demonstrated the way in which there is not always consensus on who will be teaching adolescents and at what stage [72]. Building on this work, Tuli et al. [71] studied Menstrupedia, a platform for supporting menstrual literacy among an Indian audience.

Notably, other research finds that educated youth in India reported the internet as their preferred source for seeking information about sexual and reproductive health, as compared to asking friends, family, or doctors, and say that lack of privacy prevents them from seeking reproductive health care [42]. In this context, the inability to openly discuss reproductive health creates hindrances to awareness. The question we should be asking in the U.S. is whether social stigma and concern about even having conversations with family and friends for fear of prosecution [54] might overall hamper awareness and information seeking.

As Kumar et al. have also pointed out, women's well-being is not just a matter of information access but requires a holistic rethinking of the challenges that individuals face, which shape their encounters with that information [37]. For example, numerous studies of female adolescents in Ethiopia reported that poor communication with parents on sexual reproductive matters was a barrier to seeking services [1, 29, 69]. We don't know the extent to which social and parental relationships shape online reproductive information seeking in the U.S., particularly post-Roe. We suspect that parental relationships may be even more critical when there is uncertainty surrounding the ever-changing laws enacted by states and mounting digital risk [62], particularly targeting teens [19].

Given that these environments often stigmatize reproductive health, they offer valuable insights into how teens navigate information seeking in hostile climates, similar to the current situation in the U.S. This research aims to bridge the gap in understanding how teens seek information under these new adverse conditions, adopting a holistic approach to do so.

3 METHODS

We conducted this research in July 2023. We used a U.S.-based recruitment service that has a panel of participants that they contact for qualitative research.

The panel included people who have participated in research or who have indicated that they are willing to participate in research. Recruiters first contacted parents by emailing them with the screener (Appendix A.1). After the screener was filled out, parents whose teen qualified were contacted via phone to get *consent* for their teen to participate in the study. The consent form given to parents to sign described the study goals (e.g., "to understand reproductive health information seeking behavior among people aged 13-17"), procedures, risks and benefits, and confidentiality. Parents were not given a copy of the interview protocol and were not invited to be part of the interviews. Parents who signed the consent were asked if the recruiters could call and screen their teens. If they agreed, their teens were then screened and invited to participate in a 60-minute interview.

Teens were screened for the interview based on age, pronouns, gender, sexual orientation, ethnic identity, use of the internet or social media to seek information on reproductive health. Our goal with this screener was to ensure a diverse mix of gender identities, sexual orientations, racial and ethnic backgrounds, and residence in different states among the participating teenagers [17, 56].

The list of these teens was given to the researchers to confirm that an adequate mix of demographics had been obtained and the researchers provided a zoom invite for the recruiters to share with teen participants. Recruiters instructed teens to not share their video during the interview and to not have any identifiable information on their screen. Details about teens' final demographics are in Table 1.

Teens who conducted interviews with us were read an *assent* form and asked to agree to the audio recording of the interview. They were told that they did not have to share anything they did not feel comfortable sharing, they could stop at any time, and that they should refrain from sharing any information (such as full names, school names etc.) that would identify them on the interview recording.

The interviews were conducted by the three researchers. The last author conducted the initial three interviews, and the first and second author conducted the remaining interviews.

Our interview sample of 15 participants includes 6 heterosexual/straight, 5 bisexual, 2 gay/lesbian or queer, 1 pansexual, and 1 who identified as asexual. In table 1, we provide teen participant demographics. We identify their states using the classifications given by the Center for Reproductive Rights (<https://reproductiverights.org/maps/abortion-laws-by-state/>)¹

3.1 Privacy and Ethics

We conducted sensitive interviews about reproductive information seeking during a time when abortion is illegal in some parts of the U.S. As a result, we do not provide the name of the recruitment service to ensure the confidentiality of our participants. In addition, we did not obtain participants' email address or full name. We recorded interviews on our phones. Honorarium were distributed through

¹The Center for Reproductive Rights classifies states as follows: "Expanded Access" means abortion rights are protected by state statutes/constitutions, and other laws and policies have created additional access to abortion care. "Not Protected" means abortion is accessible but is not protected under state law. "Hostile" means these are states where prohibition on abortion entirely is a possibility, none have legal protections for abortion, and for those who are also "Restricted" there is a ban at 6 or 12 weeks."

the recruiter. Audio recordings were deleted after recordings were transcribed. All procedures received approval by our institution's IRB.

3.2 Data Collection

We conducted 15 interviews off-video over Zoom, which were audio recorded separately and uploaded to a shared secure folder where the researchers could listen and transcribe them. The assent as well as some more sensitive conversations were done off-record. The recorded portion of the interviews was an average of 27 minutes and lasted between 14 minutes and 50 minutes.

3.2.1 Interview Protocol. We used a semi-structured interview protocol to guide our interviews. We asked participants to talk about where they go online and how they represent themselves. We then transitioned to exploring how they define reproductive health and where they go for information about reproductive health, both offline and online. We asked them about how they verify the information they find and how they deal with misinformation around reproductive health information. Afterward, we asked them about how their reproductive health information seeking and/or sharing might have changed since the supreme court decision on *Dobbs v. Jackson* effectively overturned *Roe v. Wade*. We made sure to understand what teens knew about this ruling. We provide our interview protocol in the Appendix A.2.

3.3 Data Analysis

Following each interview, researchers wrote memos and shared those with the other researchers. This helped to ensure that we were probing consistently across interviews. The analysis employed reflexive thematic analysis (RTA), where the first two authors open coded concepts that would ultimately become the themes described in the findings [9, 10].

The open coding process of the data analysis was done collaboratively by the first two authors who regularly met to share their codes and accompanying quotes, develop candidate themes, and construct a plausible and compelling narrative involving these themes. The first two authors met with the third author at various points during this process to discuss themes. Consensus was reached through discussion.

Following the guidance of McDonald et al. we did not use a codebook or inter-rater reliability because our codes were a "process not the product" to be tested in future study or used by other researchers [48].

RTA allows for the researchers to draw on their domain expertise and personal experience to tell a story about the data [10]. The themes we developed represent patterns of codes in the data grouped into concepts, like the impact of being sexually active, one's state or laws and the combination of age and cultural norms on perception of risk as it relates to reproductive health information seeking and sharing. These themes represent concepts that are most salient, not necessarily most frequently encountered.

Braun and Clarke have noted that data saturation—often operationalized as redundancy—does not sit comfortably with the epistemology of RTA. Because meaning is "generated through" thematic analysis not "excavated from" the data, decisions about how many participants are necessary to complete data collection

ID	Age	Gender	Sexual Orientation	Race	State
1	16	Woman	Bisexual	White	Expanded Access
2	16	Woman	Bisexual	Black/AA	Not protected/accessible
3	13	Woman	Hetero	White	Expanded Access
4	17	Non-binary	Gay/Lesbian	Hispanic or Latino/a/x	Hostile/Restricted
5	13	Woman	Asexual	White	Expanded Access
6	14	Woman	Hetero	Hispanic or Latino/a/x	Expanded Access
7	16	Woman	Hetero	White	Expanded Access
8	17	Woman	Pansexual	White	Hostile/Restricted
9	13	Woman	Hetero	Hispanic or Latino/a/x	Expanded Access
10	15	Woman	Hetero	White	Expanded Access
11	17	Trans Male	Queer	–	Expanded Access
12	15	Woman	Bisexual	White	Expanded Access
13	16	Woman	Bisexual	White	Expanded Access
14	17	Woman	Bisexual	Asian or Pac Isl.	Hostile
15	17	Woman	Hetero	White	Hostile/Restricted

Table 1: Participant information including age, gender identity, sexual orientation, race/ethnicity, and state abortion laws. Items are left blank when participants did not know or preferred not to answer.

are highly subjective [8]. We felt that after 15 interviews, we had crafted themes that told a compelling story about the data—in other words, we had achieved meaning saturation. Finally, we take a phenomenological approach bracketing our experience and privileging that of our participants’ and thus do not call out when they are right or wrong in the findings [65].

3.4 Interpretive Frame

While we approached our analysis inductively, we found some similarities and differences with McDonald and Andalibi who studied people who can or may become pregnant finding that laws, culture, age, and reproductive risk generally influence privacy strategies around reproductive health [45]. In our study, we find that laws, reproductive risk, as well as age are factors influencing information seeking and sharing as it relates to privacy post-Roe. Thus, although we developed themes inductively, McDonald and Andalibi [45] served as a deductive interpretive frame against which we compared vulnerabilities about risk in terms of how it relates to information seeking and sharing.

While all of our participants were much younger than those McDonald and Andalibi interviewed, and most were not sexually active, even among this young cohort, age did influence information seeking and sharing behaviors. Very young participants, who felt they were far from a stage of sexual activity and social pressures, were more likely to be unsure of what to think and defaulted to cultural and family values and norms. By contrast, older teens were more concerned about their information seeking and sharing post-Roe. These teens felt social pressure to both share and conceal information, on search, social media, and apps. At the same time, we also find that those relatively older teens who were most informed about privacy risk were sometimes not compelled to take precautions because they were not sexually active. We elaborate on the complexities of risk in our findings.

4 FINDINGS

4.1 Where do teens seek reproductive health information?

In this section we provide context for participants’ reproductive health information seeking and sharing practices. The teens we spoke with generally prefer online sources of information about reproductive health but also turn to offline sources, namely their mothers.

4.1.1 Formal education. Schools primarily offer textbook-based knowledge about reproductive health—a foundational, mostly anatomy-based, understanding. This curriculum, while imparting basic information, is perceived as lacking depth and social context. While schools do provide a baseline understanding, there is a sense conveyed by participants that the topic of reproductive health is not given the prominence it requires:

“Public education systems, particularly in the South, have issues with properly telling the young people about reproductive health and reproductive health options which then creates a population that doesn’t really know much about it.”

4.1.2 Offline personal network sources of information. Participants consistently point to their mothers as a primary source of offline reproductive health information. Many of them find this approach helpful because of their mother’s experience and personal familiarity with reproductive matters:

“...I went for reproductive health advice from my mom just because she is also a woman so she would know what our minds are going through.”

This pattern of seeking maternal guidance for reproductive health information offline appears to be a prevailing trend among our participants, potentially indicating a strong foundation of open communication within the family unit. The significance of parental guidance extends beyond abortion laws, as participants indicate receiving advice from parents on periods, birth control, abortion,

state laws, and practicing safe sex. While the majority of participants identified their mothers as their primary source of offline reproductive health information, a subset also cited older sisters, friends, and doctors.

4.1.3 Online sources of information. The prevailing preference for online sources, particularly through social media and search engines, is evident among the majority of participants. Social media platforms such as TikTok and search engines like Google are favored online choices. Additionally, some participants identified scientific resources such as Planned Parenthood and Google Scholar as sources they utilize to research their reproductive health information. Participants say they turn to social media primarily to gain insights from the experiences and opinions of others. They perceive value from diverse perspectives and viewpoints that only online communities offer.

However, for participants belonging to marginalized communities, social media emerges as a central platform offering a more nuanced and intersectional perspective on reproductive health matters. A notable instance involves a participant belonging to the Black/POC community who highlighted the role of social media in providing insights into the experiences of marginalized individuals, a dimension often inadequately addressed by mainstream reproductive health websites. This participant pointed out that while reputable sources may discuss topics like intrauterine devices (IUDs) based on scientific facts, they may overlook crucial details such as the potential pain associated with them. In contrast, social media serves as a space where discussions encompass these intersectional aspects, offering a more comprehensive understanding of the challenges faced, particularly by Black women or People of Color (POC).

"[T]he process to insert [IUDS], can be incredibly incredibly painful and it's something where a lot of women are not given any information ... when it comes to black or POC women, their pain is not treated as that important. So they don't really receive the help they need when getting the procedure. ... [Reputable reproductive health sites] have a little bit of blind spot where they don't address some of the real experiences that a lot of people have. They are only going off with the scientific evidence which has a really good place but when it comes to, like, which option is best for me, social media provides another perspective that's also really helpful."

Another pertinent example involves discussions about Plan B, where social media played a crucial role in disseminating information that might not have been readily available from conventional sources. For instance, the same participant learned from social media that Plan B may be less effective for women who are overweight, information they *thought* could not readily be obtained from reputable women's health sites. These instances underscore the importance of social media as a source of information that addresses specific needs and experiences, enriching the overall discourse on reproductive health. But while social media serves as a platform for experiential sharing, the majority of participants tend to place greater trust in search engines like Google when seeking reliable and validated information.

4.1.4 Encounters with misinformation. Many teens recall times when they encounter misinformation on reproductive health information, both online and offline. When participants suspect they encounter misinformation, they employ various tactics detailed below to verify the accuracy of the information.

Participants have reported coming across online misinformation on social media platforms such as TikTok and Instagram. They emphasize the importance of distinguishing between informative content and individual opinions with regard to reproductive health. Most say that if they are suspicious of a claim made on social media, they double-check the information on Google or Google Scholar, sometimes reading and comparing multiple articles, to see if it is true:

"I would try to read more than like 4 or 5 articles on the same subject and see if they were contradicting each other, and what the contradictions were to get a sense of what may not be true."

Another tactic they employ is to look at the website domain; those ending in .gov, .org, or .edu are deemed to be more reliable and trustworthy sources of information to them. In addition to using websites, another strategy many participants use against misinformation is following up with another individual whom they perceive to have related experiences or information, such as their mom, friends, or doctor to get a second opinion on the information. In addition to website domains, one participant brings up that the order in which Google searches appear are important. They also turn to their parents for advice regarding the trustworthiness of the websites:

"...most of the websites that show up first are the most like, trustworthy, right. They have the .com, .org, also the website name. Also, if the website has statistics. Sometimes, I'll ask my parents if this website is good."

Similarly, if participants receive misinformation offline from family members or friends, they say they will search Google to find a website they believe is trustworthy to confirm or obtain the correct information.

4.2 Post-Roe: Perceived risk and information seeking and sharing

After *Roe v. Wade* was overturned, participants describe being flooded with (mis)information and opinions about abortion, especially online.

4.2.1 Reproductive health information seeking and sharing post-Roe. After *Roe* was overturned some say they became more "vigilant" about making sure sources were properly vetted. One participant told us that misinformation was not only coming from anti-abortion groups but also people who were in "fear" about the decision, which made them more vigilant about verifying information.

"Seeking out information about reproductive health [after Dobbs] made me more vigilant in making sure my sources were proper because there were people spreading misinformation due to the fact that so many people were in fear about their reproductive health. Some people spread misinformation intentionally. . . And on the other side some people were unintentionally spreading"

misinformation because of the fear [Dobbs] created. People were just kind of latching on to the first piece of information they heard about reproductive rights, and spreading it to everyone else without doing research to make sure it was something true."

While many said they didn't much worry about abortion issues before Dobbs, they have since learned about abortion procedures, attitudes and rights through conversations with their mother, friends, and on social media apps like TikTok.

"I think I went to ask [my mom] about the overturning of Roe v. Wade. Asking her what it really was, what is going on, why they're doing this, who decided it was a good idea."

Indeed, post-Roe, many took to the internet to find out more information on abortion issues, or to "double check" to make sure they were in a safe state when it came to abortion rights and gender affirming care, noting that there was a lot of misinformation about these rights following the overturn of Roe. Notably, some teens are already wary of laws in their state that might restrict access to abortion for minors.

Many participants are cognizant that, in the days following Roe, women were being urged to delete their period tracking apps and this made them go online to learn more about the safety of these apps—even if they ultimately did not delete them, though some did and others knew friends that did.

Post-Roe, some participants said they were also generally aware of the risks of being outspoken about issues—identifying various threats such as government surveillance, social stigma, and the risk of getting doxxed. One mentioned learning about women in illegal states crossing state lines.

Yet, the privacy measures teens adopt in response to this situation vary depending on factors such as whether they are sexually active or not, whether they are in a heterosexual relationship, and the abortion laws in their respective states. The younger group of participants (aged 13-15) appear to be less informed and concerned about the issue. Instead, they seem to lean more toward their family's values and opinions on the matter.

In this section, we talk about the key experiences of risk that guide information seeking and sharing.

4.2.2 Perceived risk post-Roe: Sexual activity. Following the overturn of Roe, many teens describe coming across TikToks telling users to delete period tracking apps such as Flo—which is what most of our participants said they used—because of their bad privacy policies. While some participants who were sexually active deleted their period tracking app, many teen participants did not delete or stop using their period tracking app, despite these directives. There are two, at times, overlapping reasons for this having to do with the risk of getting pregnant and technology privacy assessments. Some feel that because they are not sexually active, or, in a few cases, not in a heterosexual relationship they don't need to worry about getting pregnant and thus enter their period data. Some also describe doing research on the Flo app by reading the privacy policy or getting information from TikTok videos and concluding it to be safe. One of the participants who was not compelled to delete their app, because they did not feel they were "in danger of getting

pregnant," nevertheless motivated their sexually active friends to switch to another, safer app because of the perception that it has a better privacy policy.

"I have a period tracking app. I think I saw something [on TikTok] where you should stop sharing your data because the specific app I use will send it back to the government. I looked into that a little bit. I think I decided that I was going to keep using the app, but I told my friends about it and some of them decided to stop because they felt it was intervening into their privacy...I think the main difference is that I'm in no danger of being pregnant."

That is, this participant feels that in circumstances where their friends are at higher risk because they were sexually active, additional privacy precautions should be taken in terms of what reproductive health data is shared. It's also notable that this person mentioned the app was sharing data with the government.

Participants who did not identify as heterosexual cited similar reasons as sexually inactive participants as to why they continue to use menstrual tracking apps. They also said that their friends who were sexually active and engaged in sexual activity with the opposite biological sex were concerned about their privacy and deleted period-tracking apps.

4.2.3 Perceived Risk Post-Roe: State Law, Politics, and Social Repercussions. The laws in their state, the changing political and legal climate, and social context play a critical and complex role in participants' reproductive information seeking and sharing practices. In this section, we describe some ways in which the law, politics, and social influence impact information seeking and sharing practices.

Many participants in states with expanded access express using their social media platforms more to share informative posts on the issue as it seemed, to them, to be a way to engage in activism. Those in restrictive states say they avoided it. But, many also said that they have been seeking more information about the law because the topic has become a subject of discussion both online and offline, prompting them to become more informed (and worried) about it.

Some reported reducing their social media activity or becoming more cautious in their sharing habits. They cite reasons such as a decreased willingness to disclose personal information or opinions publicly and a general desire to enhance their online as well as their offline security. These participants tended to come from states where abortion is not accessible.

Indeed, even participants in safe states might be wary of what they do online because of perceptions that abortion laws are evolving and they may not be safe for long. One of our participants residing in a state where abortion is legal indicated that if the situation were to change in their state, they would become more cautious regarding their online searches and what they share on social media.

If things were to change [in my state], I would definitely be a lot more reserved and much more vigilant in the ways that I got my information about reproductive health, but also anything I say on social media because we all have digital footprints. On social media, even if we have private accounts, they can be accessed by

people we don't necessarily think they would be able to access it."

These participants might have mentioned the possibility of using a Virtual Private Network (VPN) to protect their IP address in such a scenario.

Concerns about the social repercussions of changing laws and political climates are a frequent theme. One participant who has taken steps to secure their personal information and has curbed their online information seeking, explains that they were motivated by an incident when they learned about a pro-abortion protest where attendees were reportedly photographed and subsequently subjected to doxxing.

"I definitely try to avoid getting reproductive health information online. I try to avoid putting my name and information into too many things like in certain organizations because I fear kind of my name getting out there sort of thing and getting harassed. Because I knew that, there was a Roe v. Wade protest in my city and a lot of the people who were there, their names got out and doxxed to a pretty right winged group and bad stuff happened to them."

Another participant talked about accompanying a friend to a clinic to help them avoid harassment from protesters noting that people often overlook the point that clinics provide services beyond abortions.

Many participants feel that, post-Roe, it is best to avoid engaging with people or seeking out information about abortion offline because of the risk of getting into an argument or receiving misinformation. One participant says they no longer feel comfortable discussing abortion laws with friends:

"When the topic of abortion law gets brought up between me and my friends, it's like sort of uncomfortable like it's just kind of difficult for us to talk about without getting in an argument or something like that."

4.2.4 Age and Family Values. Age and family values play an important role in decisions about reproductive health information seeking and sharing among younger teen participants. Typically, these younger participants tend to default to the views and values of their family members, particularly their mothers, and are often unaware of any risks following the overturning of Roe. Among our relatively younger teen participants (aged 13-15), many express not having a personally formed opinion on reproductive health and abortion issues, opting to adopt their parents' opinion instead.

"So I guess like I understand both sides (pro-life and pro-choice) based on what my friends have said, what I learn about in school and from my family. I have like mixed feelings about it. Because I am a practicing Catholic and so a lot of my thoughts on this issue are very different from what my friends think."

The younger teen participants who are not sexually active and are less informed about current events and laws related to abortion are unsure of their personal views on the matter. They confide in family, particularly their mother, on reproductive matters and tend to avoid seeking out information elsewhere because they fear they might be misinformed or told something strongly opinionated.

5 DISCUSSION

The post-Roe social risks, including harassment and doxxing, are major concerns for teens. Additionally, they worry about state laws and their digital footprint, especially those living in restrictive states or those at high risk. Laws and politics, family values, and social norms play a complex and interlocking role in shaping teens' information practices post-Roe. In this context, we offer guidance for HCI scholars and advocacy organizations.

5.1 Sources of Reproductive Health Information

Teens, particularly Black/POC, often turn to their peers on social media for contextualized guidance about reproductive health information that they then contrast with reputable sites.

Guidance: Reputable sites that publish reproductive health guidance might consider incorporating valid intersectional experiences shared on social media and in a creative way (e.g., [71])—taking into account infrastructures, structural barriers and literacy, not just access [37]. Even if that information is there (e.g., IUD pain and race, Plan B efficacy and weight), teens are not finding it.

Despite their efforts to seek out reputable information, however, teens sometimes overlook information and are uninformed about how Google search works—imagining that top results are the most reputable and are not biased [55].

Guidance: Teens are trying to juggle scientific data with lived experience, and they need guidance about how Google search algorithms work and ways that they can find the customized reproductive information they are seeking and which is appropriate for them. Indeed, it's simply not clear that they are using Google search in a way that is leading to helpful sources of information [13].

It is clear, however, that, unlike studies we reviewed (e.g., [1]), mothers can be a primary source for guidance and are potentially important resources or audiences for online information that is shared with teens. But while it is clear that mothers (and friends, siblings, and close confidants) have an important role to play in information seeking, they are also resources that come with certain risks that needs to be balanced.

Guidance: Given that conversations with mothers and close relatives can put teens (and those they speak with) at risk (e.g., [34, 62]), particularly in states that are considering or enacted "abortion trafficking" laws for anyone that transports teens across state lines to receive an abortion [31], it will be important to consider how to encourage these conversations and provide privacy threat model related guidance to mitigate prosecutorial risk.

5.2 "Researching" Period Apps and Data Privacy

Teens researched their period apps and discovered reasons for concern, but ultimately concluded they were safe enough to use. Often, this conclusion arises because they perceive their sexual activity or orientation as an indication of a low personal risk. Several participants express this view, particularly regarding widely used apps like Flo, the Period & Ovulation Tracker, which was recently charged by the Federal Trade Commission (FTC) with sharing information with third parties such as Facebook, Google, and others [15]. According to the Electronic Frontier Foundation, Flo's privacy policy also stipulates that it may share information with law enforcement [25]. One of the most downloaded free apps on the Apple store

during post-Roe 2022, which positioned itself as privacy focused, said that it would voluntarily hand over data to law enforcement [14]. Yet the lack of concern about virtually any other reproductive health-related data on one's phone (not to mention social media or messaging data [62]) is also concerning. The Department of Health and Human Services (HHS) warns that any health information stored on third party apps and devices is not protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA) [61].

The decision to not delete period tracking apps seems to be mediated by participants feeling that they are not as much at risk because of their sexual activity. Yet it's not clear that teens readily engage in the type of threat modeling that is required to gauge these risks [49].

Guidance: These findings point to three different prompts for reflection. First, teens tend to rely on both source texts (e.g., privacy policies) and highly subjective accounts on social media like TikTok. For instance, propelled by TikToks stating their dangers, they may go to a period tracking apps' website only to find that their privacy policy seems to be safe. What they seem to be missing is a critical investigation from the media or advocacy sites that have rehearsed these threat models (e.g., [22]).

Second, and related, it's clear that teens are able to think about immediate risk as it pertains to their information-sharing practices but struggle with the downstream risks. Other literature points to the way that teens are aware of long-term risks but maybe ignore them [35]. Yet teens are able to think about other their friend's downstream risk. This is something that should be built on when designing information and privacy literacy tools mentioned above that could be created by advocacy organizations. Teens need to be given the tools to threat model the risks, combining their preference for seeking out privacy policies with threat models that speak to their circumstances.

Third, it is clear that more holistic guidance and threat modeling about the risks of surveillance by other apps is needed. Period tracking apps sell period data, but there are numerous other data sources that can be utilized to surveil and prosecute, including, for example, search and location data [18, 75, 81], abortion pill purchases [27] and other online activity related to reproductive health [54], social media and messaging data [62], and medical records that are stored on third party apps [61] or shared across medical databases [82].

5.3 Role of Risk

Many teen participants are attuned to the risks associated with reproductive health information seeking and sharing online, and these have to do with reproductive risk, social norms, and laws as McDonald and Andalibi found in their study of individuals who can become pregnant post-Roe [45]. The chilling effects are often more pronounced among those in restrictive states, or who could imagine living (or have lived) in them [45].

Understandably, there are many facets to "technology literacy" that are triggered by risk necessary to achieve and safeguard reproductive health, especially given the numerous and highly varied threat vectors to which menstruating people are exposed.

Guidance: Researchers and advocates may want to consider framing "reproductive literacy" in a broader context of risk (or "long, holistic, and intersectional view" [37]) that encompasses technology privacy, social, cultural and legal risks. For instance, what are the implications of identity when it comes to reproductive information seeking, are there certain populations that need more help because their past experiences have hampered their trust? When one encounters a crisis pregnancy center online, they not only collect data that can be used by law enforcement [2, 52], they also plant misinformation and create delays [43, 77] that in turn raise the stakes and burden for accessing healthcare and also potentially create additional incriminating data points.

FemTech has a role to play in educating teens about risk about their reproductive health and these design require more intersectional and local cultural nuance [37, 71, 73]. Post-Roe, privacy concerns have further complicated the design requirements of FemTech, not only to be more privacy protective, and in a tailored way, but also to take more seriously their role in reproductive literacy as a form of protection *against* prosecutorial risk.

6 CONCLUSIONS AND LIMITATIONS

We examine the reproductive health information seeking and sharing practices of teens in the U.S. post-Roe. We find that social and to some extent legal risks are the most influential in curbing teens information seeking and sharing practices mediated by sexual activity and family and culture. We also find that while teens are diligent about researching technology risks, sexual activity and conclusions about risk may prevent them from taking steps to better safeguard their privacy. We did not screen based on sexual activity, which might have prevented us from gaining deeper insight from those for whom the risk of becoming pregnant is more immediately felt and who may have been more likely to take steps to protect and curtail their reproductive health information seeking and sharing practices.

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A RESEARCH MATERIALS

A.1 Screener Questions

[Questions asked first to parents of teens **about their teens** and then to teens]

We are conducting interviews for research with teens about their reproductive health information seeking practices. We just have a few questions to see if you/your child is eligible to participate in this study.

1. What is your child’s/your age?
2. What are your child’s/your pronouns?
3. What is your child’s/your gender? (Select all that apply)
 - a) Female
 - b) Male
 - c) Non-binary
 - d) Prefer to self-describe:
 - e) Prefer not to disclose
4. What is your child’s/your sexual orientation?
 - a) Asexual
 - b) Bisexual
 - c) Pansexual
 - d) Heterosexual/straight
 - e) Queer
 - f) Questioning
 - g) Prefer to self-describe:
 - h) Prefer not to disclose
5. What does your child/do you identify as?
 - a) Hispanic or Latino/Latina/Latinx
 - b) Black/African American
 - c) White/Caucasian
 - d) Asian or Pacific Islander
 - e) American Indian/Native American or Alaska Native
 - f) Middle Eastern
 - g) Prefer to self-describe:
 - h) Prefer not to disclose
6. Does your child/Do you use the Internet or social media to look for information about your reproductive health?
 - a) Yes
 - b) No [If “No” Not eligible]

A.2 Interview Protocol

Background: Identity and social media use warm up

- Tell me about yourself. What do you like to do for fun?
- Where do you like to go online? What social media do you regularly use?

- How do you typically present yourself online? How do you think that shapes your experience on social media?
- Are there places where you go where you share things about yourself that you might not otherwise? Tell me about that. (Probe: How do you present yourself there? What do you share that you might not share elsewhere? Why?)

Reproductive health information seeking

I want to spend the remainder of this interview talking about reproductive health. What it means to you and how you go about getting information on it.

- What do you think of when you think of reproductive health?
- In the past, where have you gone for information about reproductive health? (Probe: Parents, friends, teachers, online, other?)
- When you go to [explore all those mentioned: parents, friends, teachers, other]...
 - What kind of information or advice do you get? Is it helpful?
 - Think about the last time you went to [parents, friends, teacher, other] for advice about reproductive health? Can you tell me a little about that experience (Probe: Why did you go? What did you learn?)
 - Are there other recent experiences you can describe?
- When you **go online**, where do you go for information about reproductive health? (Probe for each:)
 - What kinds of information or advice do you get? Is it helpful?
 - Think about the last time you went there for information or advice about reproductive health? Can you tell me a little about that experience (Probe: Why did you go? What did you learn?)
 - Are there other recent experiences you can describe?
- When it comes to **going online** for help with reproductive health information, do you ever think that what you're looking at may not be true? (If so, probe:)
 - Can you give me some examples?
 - Think of that last time you experienced something that you thought might not be true? What happened? Why did you think it was not true? What did you do?

Reproductive health information seeking Post-Roe

*I'd like to shift gears and ask you about how your reproductive health information seeking or experience might have changed since the Supreme Court Decision in *Dobbs vs Jackson to overturn Roe vs Wade*.*

- Do you know about that decision? What can you tell me about it? (Probe as appropriate:)
 - How do you feel about that decision?
 - How has this decision affected you?
- [Ask if familiar with decision:] How, if at all, has this supreme court decision affected *what information you share* about reproductive health? (Probes: make sure to understand offline vs online.)
 - Has it changed *what* you share with family and/or friends?
 - Has it changed *what* you share with your doctor or other healthcare professionals? Explain.
 - Has it affected *how* you communicate with them (i.e., family or doctors, etc)?
 - What about *what* you share online?
- [Ask if familiar with decision:] How, if at all, has this Supreme Court decision affected *what information you seek/look* for regarding reproductive health? (Probe: make sure to understand offline vs online.)
 - Do you think it's affected the reproductive health information *you receive*? Tell me about that? (Probe: make sure to understand offline vs online.)
- Are you familiar with the laws in your state that govern abortion? [Ask if familiar:]
 - What is your sense of how those laws might be implemented?
 - Do you have a sense of what that means for you?
 - Have these laws influenced any of the changes you just described (e.g., information sharing and seeking)?
 - Will/Have any of these laws affect(ed) how you use technology?
- Is there anything else that I should know about you or your experience that is relevant to this discussion that we haven't talked about?