LGBTQ Persons' Use of Online Spaces to Navigate Conception, Pregnancy, and Pregnancy Loss: An Intersectional Approach

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ABSTRACT

Navigating conception, pregnancy, and loss is challenging for LGBTQ people, who experience stigma due to LGBTQ identity, other identities (e.g., loss), and intersections thereof. We conducted interviews with 17 LGBTQ people with recent pregnancy loss experiences. Taking LGBTQ identity and loss as a starting point, we used an intracategorical intersectional lens to uncover the benefits and challenges of LGBTQ-specific and non-LGBTQ-specific pregnancy and loss-related online spaces. Participants used LGBTQ-specific online spaces to enact individual, interpersonal, and collective resilience. However, those with multiple marginalized identities (e.g., people of color, non-partnered individuals), faced barriers in finding support within LGBTQ-specific spaces compared to those holding privileged identities (e.g., White, married). Non-LGBTQ spaces were beneficial for some informational needs, but not community and emotional needs due to pervasive heteronormativity, cisnormativity, and a perceived need to educate. We conceptualize experiences of exclusion as symbolic annihilation and intersectional invisibility, and discuss clinical implications and design directions.

CCS CONCEPTS

Human-centered computing ~ Collaborative and social computing ~ Empirical studies in collaborative and social computing • Human-centered computing ~ Human computer interaction (HCI) ~ Empirical studies in HCI

KEYWORDS

Social media, online communities, Facebook groups, LGBTQ, pregnancy, conception, pregnancy loss, miscarriage, reproductive health, stigma, intersectional stigma, intersectionality

1 INTRODUCTION

Lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals are marginalized and stigmatized in many ways, including within reproductive healthcare contexts. When LGBTQ people pursue biological parenthood, it is often the result of a conscious, deliberate decision made in coordination with not only their partner (if they have one) but also a team of healthcare professionals. Marginalization here often consists of barriers to receiving proper reproductive healthcare [30,84,115,141,161,162], lack of accessible information about LGBTQ-specific reproductive methods [84,96,161], and oftentimes outright discrimination at the hands of healthcare professionals [26,30,123,141]. LGBTQ people continue to experience stigmatization throughout their experiences within reproductive healthcare contexts: when trying to conceive (TTC), when pregnant, but especially after pregnancy loss. Pregnancy loss is in and of itself a stigmatized experience for anyone, regardless of sexual or gender identity, but may feel uniquely devastating for LGBTQ individuals considering the unique intentionality, planning, and coordination behind the pregnancy in the first place [15,62,163]. Moreover, LGBTQ people, like anyone, also hold other identities, some of which (e.g., woman of color of low socioeconomic status [43,48], disabled women [119]) are also stigmatized within reproductive healthcare contexts.

LGBTQ individuals encounter some different reproductive obstacles compared with heterosexual cisgender (i.e., when gender identity matches sex assigned at birth) individuals [124]. For example, choosing the ideal treatment plan that minimizes cost and time and optimizes the likelihood of achieving a healthy baby can be challenging for LGBTQ individuals as data regarding assisted reproductive technology (ART) outcomes in this population are limited and conflicting. Although some studies have shown no difference in pregnancy rates when comparing LGBTQ individuals with heterosexual people undergoing the same treatment [58,124,126], others have shown improved pregnancy rates among LGBTQ individuals compared with heterosexual individuals undergoing ART treatment [79]. Once overcoming obstacles to become pregnant, pregnancies do not always proceed as desired and sometimes end in loss. Despite the fact that pregnancy loss is a common experience, occurring in 10%-20% of all clinically recognized pregnancies [143,168], and despite the unique challenges LGBTQ people face in reproductive health settings, not much work adequately discusses how LGBTQ people who experienced pregnancy loss effectively cope with this significant event and what shortcomings remain. Pregnancy loss itself is an experience associated with significant stigma in the American society [1]. Thus, it is important to examine LGBTQ peoples' experiences of pregnancy loss, considering the compounded stigmatization involved due to LGBTQ identities *and* loss as a starting point *and* possibly other identity facets.

Social technologies such as social media and online forums or support groups can help facilitate coping and social support exchange when facing stressful life events such as loss [3,12,71,106,147]. For example, research has explored how LGBTQ individuals use online spaces to exchange, support and create personal representation in a variety of contexts [38,45,60,67,114,160]. Specific to pregnancy loss, prior work indicates that social media use associated with the pregnancy loss experience may be a critical component of the healing process [9,10], but this work mostly focuses on cisgender and heterosexual women [6,9,10,13,64,85]. When it comes to LGBTQ individuals, technology, and pregnancy loss, research has examined individual social media use where individuals typically connect to others they have pre-existing ties with [137] rather than topic-based spaces that bring together people without pre-existing ties to connect. This prior work then raises questions about the benefits and challenges that LGBTQ individuals might face in online spaces in relation to their pregnancy and loss experiences. In this study we ask:

What benefits and challenges do LGBTQ individuals perceive in pregnancy and pregnancy loss-related online spaces? To address this research question, we draw from two key concepts: resilience and intersectionality.

Prior research demonstrates resilience among LGBTQ people, a concept which encompasses the strengths (internal and external assets) of individuals and how personal resources (e.g., individuals' capacity to seek online spaces aligned with personal identities/experiences) and social resources (e.g., the creation and sustainment of identity/experience-specific online spaces by those who hold stigmatized identities) contribute positively to wellbeing [69]. More specifically, we draw on the following social ecological definition of resilience put forth by Ungar:

> "In the context of exposure to significant adversity, resilience is both the capacity of individuals to navigate their way to the psychological, social, cultural, and physical resources that sustain their wellbeing, and their capacity individually and collectively to negotiate for these resources to be provided and experienced in culturally meaningful ways." [156:225]

In this way, resilience is conceptualized as a multi-dimensional construct involving individual, interpersonal, and collective resilience [94,98,155,156]. Furthermore, multidimensional resilience has been examined in reference to children [155], adolescents [61], Indigenous persons [14], and queer students of color [50]. This multidimensional conceptualization was put forth to mitigate individual-focused definitions of resilience that pathologize individuals who are viewed as not resilient and/or place personal responsibility on individuals to be resilient [155,156]. Moreover, while resilience has been conceptualized as both an outcome and a process [94,155,156], we draw upon the above definition to reflect on the process of navigating and negotiating towards resources and ultimately wellbeing after experiencing pregnancy loss.

We take an intracategorical intersectional approach to this investigation. Intersectionality, a theory that has been taken up by scholars in diverse fields including Human-Computer Interaction (HCI) [23,53,86,139,144,146,165] is a critical theoretical approach, rooted in Black feminism and activism, that accounts for the inadequacy of using one source of oppression (e.g., gender identity or sexual orientation) as the singular cause of inequity [46]. Intersectionality emphasizes social justice through centering the voices of individuals who experience oppression and drawing attention to the manifold structures that perpetuate and maintain inequality [20,33,116]. Furthermore, intersectionality is a lens through which to uncover the ways in which power and privilege operate along with oppression [27,32,121,166]. In this way, pregnancy loss, while is a stigmatized identity for some, is still a marginalized experience [56,90,111] and thus within the purview of intersectionality research.

Relatedly, intersectional stigma describes the matrix of oppressions a person faces as a result of their overlapping stigmatized or otherwise marginalized identities [21]. As such, we view pregnancy loss and LGBTQ identity as two potentially stigmatizing, marginalized, and intersecting aspects of one's identity and lived experience, and account for other potentially stigmatized and/or marginalized identity facets as well. We also align this work with and are inspired by discourse around intersectionality in HCI [139,146] as well as race-conscious [128] and LGBTQ-related [148] efforts.

To answer our research question, we conducted 17 in-depth semi-structured interviews[1] with people in the United States who identified as LGBTQ or another sexual or gender minority and who had either experienced pregnancy loss in the last two years or were in an intimate partnership in which a pregnancy was lost in the last two years.

In this paper, we identify the benefits and challenges that LGBTQ individuals perceive in pregnancy and pregnancy-loss related online spaces while navigating their pregnancy and loss experience. We discuss what actions LGBTQ people took to find support, solidarity, and information to overcome challenges during their pregnancy experiences, especially after pregnancy losses. We found that most participants were able to find relevant, empathetic support and advice from other members in LGBTQ-specific pregnancy or loss-related spaces, especially through interconnected spaces (i.e., that a person could follow throughout the different stages in their experiences). While it can be difficult for any LGBTQ person to find adequate, educated support after pregnancy loss [57,111], we learned from a small sub-set of participants that it is even more difficult for those people with multiple stigmatized and/or marginalized identities. For example, one non-partnered participant and POC (people of color) reflected on how the intersections of their specific identities made it harder for them to find others who could relate and empathize, much less offer actionable advice, compared to those holding privileged identities like being partnered or white. Yet, sometimes participants navigated this challenge and enacted forms of power and resilience by creating their own hyper-specific online spaces (e.g., a Facebook group for POC who experienced pregnancy losses). The intersectional lens further allowed us to reveal that while participants were marginalized along axes of sexuality and/or gender, as well as pregnancy loss, some also experienced privileges due to whiteness and class which may have supported them to navigate both pregnancy and subsequent social support seeking post pregnancy loss. We further conceptualize experiences of exclusion and lack of representation reported by some participants through the lens of symbolic annihilation [7] and intersectional invisibility [121].

We also propose several design directions for further exploration. First, we suggest exploring designs that facilitate finding common ground to ease intracommunity tensions. Second, we discuss designing to facilitate the creation and sustaining of intersectional nested identity-based online spaces. Lastly, we propose further investigating how non-LGBTQ-specific online spaces may be more inclusive to prove useful to LGBTQ individuals, particularly those spaces that LGBTQ individuals would find useful as identified in our findings (e.g., identity-specific groups such as those for POC who have experienced pregnancy loss). These design directions have the potential to allow LGBTQ individuals who are somewhere in their pregnancy journey including those who have experienced pregnancy losses the opportunity to find adequate, empathetic support and community in online spaces in which they feel validated and safe.

2 RELATED WORK

In this section we first provide an overview of the literature about LGBTQ individuals' experiences with reproductive health as related to this study, further narrowing down to pregnancy and pregnancy loss for LGBTQ people. We then describe how LGBTQ people and

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[1] The larger dataset used for the present analysis has also been analyzed 1) through a minority stress lens with social work and clinical implications, and 2) through a disclosure decision-making lense. Both analyses are distinct from each other and the present work, and cited where relevant in this article.

communities have used social media as a source of knowledge and social solidarity in contexts beyond reproductive health. In closing, we shift our attention to work at the intersection of social media and LGBTQ identity and conclude with discussing intersectionality as the guiding framework for the present study.

2.1 LGBTQ individuals' experiences with reproductive health

A significant number of LGBTQ people in the United States become parents [163]. Studies show that it is common for LGBTQ individuals to desire becoming parents [95,161]; however, research on LGBTQ reproductive healthcare is scant [41]. Research that does focus on LGBTQ reproductive health care often mentions barriers to receiving proper reproductive healthcare for LGBTQ peoples' needs [30,84,115,141,161,162]. For example, a major factor in a cisgender lesbian individual's decision to become pregnant has to do with her feelings about biomedicine and other means of non-cisgender and/or non-heterosexual, non-penetrative reproduction [107]. Additionally, information about LGBTQ reproductive methods is not always accessible to those seeking it, whether that is due to a healthcare practitioner's lack of knowledge on the subject [84], institutional barriers [141], or a lack of community support [52]. This gap in information poses disproportionate challenges for LGBTQ reproduction. For example, Australian cisgender lesbian women trying to conceive report struggles in accessing clinic-based donor insemination [115]. Swedish LGBTQ patients recall instances where healthcare practitioners' knowledge on LGBTQ reproductive health was lacking to the point where some patients took it upon themselves to educate their health care practitioner [84]. Some transgender men express desires to have children, however, information about fertility options for this population are limited [95,161]; this population struggles with accessing health care practitioners who are educated on and sensitive about transgender reproductive needs. For those undergoing some gender affirming surgeries (e.g., hysterectomy, orchiectomy), irreversible loss of reproductive capability makes post-operative reproductive information crucial to obtain prior to these surgeries [161]. Gender-variant individuals trying to conceive also face challenges finding resources regarding conception and pregnancy, noting how hard it is not knowing anyone living through the same experiences [52].

In addition to lack of information and resources, there is extant evidence suggesting that LGBTQ people experience discrimination ranging from the interpersonal to the institutional within reproductive health contexts [26,30,123,141]. For example, LGBTQ women in rural Nova Scotia report accounts of physical and verbal harm during birth, their providers outing them without their consent and denying their autonomy during births [26]. Trans men in Australia report being denied treatment at fertility clinics [30]. Even among the high risk factor of LGBTQ people in South Africa contracting HIV, policies concerning LGBTQ populations are reported to be absent in South African HIV prevention programs [123]. Lesbian women face significant challenges with reproductive health services such as lack of access to fertility clinics [141]; furthermore, lesbian women tend to face multiple overlapping discriminations due to their intersecting identities experience these challenges with an even greater intensity [141]. Additional discrimination manifests in the form of heterosexist or insensitive health practitioners and non-inclusive health intake documentation [162]. Even if an LGBTQ individual is able to find a fertility clinic that will respectfully work with them, the clinical definition of infertility is written under a heteronormative assumption of what constitutes a family and often presents barriers for LGBTQ individuals seeking fertility assistance to access insurance coverage for the care, thus limiting the type of care that LGBTQ individuals have access to when compared to their cisgender counterparts [99].

Overall, this research suggests that LGBTQ individuals face unique and significant challenges in managing their reproductive health. Our study exists against this backdrop of challenges faced by LGBTQ people in reproductive health settings. While the current analysis focuses on online spaces specifically, another analysis as part of our larger project concerned with LGBTQ pregnancy loss experiences and drawing from the same dataset [87] corroborated much of the prior literature pertaining to stigma and discrimination of LGBTQ people throughout the process of conception, pregnancy, and pregnancy loss. For example, almost one-third of participants (n=5/17) reported being asked inappropriate or invasive questions about their fertility process, and almost one-third (n=5/17) described experiences of receiving unsolicited advice and judgment about their fertility choices. This unsolicited advice and judgment was rooted in stigmatizing assumptions that LGBTQ people should not desire parenthood, and if they do, they should adopt, as well as systems of anti-trans and sexual stigma that denigrate LGBTQ identities and position LGBTQ people of not deserving or capable of parenthood.

2.2 Pregnancy, pregnancy loss, and LGBTQ individuals

Pregnancy loss is a common reproductive health complication, occurring in more than 10% of recognized pregnancies [143]. Some reports state 20% of pregnancies lead to a loss [143]. For the purposes of this study, we define pregnancy loss as the unintentional loss of a pregnancy at any gestational stage. Research has documented sexual orientation inequities in pregnancy and birth outcomes [54]. For example, one longitudinal study found that bisexual and lesbian women were statistically significantly more likely to experience negative pregnancy outcomes of stillbirth or pregnancy loss than heterosexual women [54]. Drawing on the minority stress theory [117], the authors hypothesized that this may be due to lower access to healthcare and additional stress related to sexual minority stigma [54], as noted above. Pregnancy loss, as an experience that shapes identities for many, is associated with stigma [111], where stigma refers to attributes or reputations that are socially discrediting [63]. Depression and anxiety are common symptoms occurring after a pregnancy loss and the trauma following a loss can last for years [93]. More so, silence and stigma is pervasive after pregnancy loss [111], closing off an individual's chance to receive social support. Indeed, pregnancy loss often leads to "spoiled" identities (i.e., identities that lead to experiencing stigma [63]), with those experiencing it worrying that they will never be "cured" from the spoiled identity [63].

The stigma associated with pregnancy loss in and of itself is situated within broader systems of power (i.e., patriarchy). As discussed in depth by feminist anthropologist Linda Layne [89–92], this stigma is related to societal expectation of reproduction, placed particularly on cisgender women, and the patriarchal system within which women are seen as worthy/better if they have (biological) children; loss is seen to represent a personal failure to live up to these societal expectations which is judged both internally (intrapersonal stigma – when one internalizes the stigmatizing societal perspective and places it upon oneself) as well as interpersonally (by others, who may subtly or overtly place judgment on a person who has experienced a loss). As also eloquently argued by Layne [88,90,92], the feminist discourse has by in large ignored pregnancy loss as an undesired pregnancy outcome and that should change.

Beyond the scope of this paper but important to report, as part of a larger study analyzing the same dataset [87], we found that almost half of participants (n=17), described internalized pregnancy loss stigma, exemplified in self-judgment and blame for their loss, as well as shame at having shared their pregnancy with others only to later have to disclose a loss. At least one participant referred to not wanting to be perceived as being 'infertile'. That said, pregnancy loss was felt as a marginalizing experience for all, even if not stigmatizing.

Common among the literature regarding LGBTQ pregnancy loss is the notion that an "atypical" route of conception for many cisgender and/or heterosexual couples is the "typical" route of conception for LGBTQ people trying to conceive. For most lesbian women trying to conceive, pregnancies are wanted, and strong emotional attachment to the pregnancy is reported to happen early on in pregnancy because of the effort required to achieve conception [163]. In contrast, pregnancy is intended in approximately 50% of heterosexual cisgender couples [59]. Research suggests that for lesbian and bisexual women, pregnancy loss can feel amplified due to the planning and coordination that goes into conception [15,17,62,129,163]. Again, our previous analysis [87] similarly described the challenges associated with conceiving as an LGBTQ person and, distinctly, feeling that their loss experiences were not comparable and could not be understood by their cisgender and/or heterosexual counterparts. In fact, some found it condescending when cisgender and/or heterosexual family or friends commented on their loss. Thus, not surprisingly, one consequence of an LGBTQ person's pregnancy loss is feelings of isolation, alienation, and "silencing"

[15]. LGBTQ individuals may feel this silencing and stigma differently than heterosexual individuals due the fact that homophobic, heterosexist, or transphobic attitudes could be directed towards them (in addition to the usual inconsiderate and harmful comments given in response to a loss, such as, "you will have another baby" [9,57]), should they choose to share about their loss (or pregnancy to begin with) [97]. In fact, "disenfranchised grief" describes the oppressive silence some lesbian individuals feel when, after experiencing pregnancy loss, they are unable to publicly mourn their loss and receive support from others [131]. Lack of social support may contribute to increased feelings of depression after pregnancy loss [164], where the depression's severity is linked to an individual's demographic and social attributes. It seems likely, then, that an LGBTQ individual who is concerned about facing discrimination might be at a greater risk for negative mental health implications.

LGBTQ people who have gone through pregnancy loss also face a number of societal barriers. Some lesbian individuals go through the emotionally taxing process of justifying the desire to reproduce in a society that favors heterosexual coupling and parenting [164]. Others experience pushback from health care practitioners concerning their desire to become pregnant [74]. Researchers have emphasized the importance of devoting more attention to studying LGBTQ experiences of pregnancy loss [35,51,159]. For example, studying experiences of LGBTQ infertility are important for adding dimension to the diverse experiences of pregnancy loss, and for challenging misconceptions surrounding the gender and sexuality of reproduction and motherhood [159]. Leaving LGBTQ couples' pregnancy loss experiences unobserved makes implicit assumptions about someone who has experienced pregnancy loss's sexuality [35]. Further, heteronormative and cisnormative language surrounding pregnancy loss closes off access for LGBTQ individuals to grieve and cope with their loss [51].

Attending to other identities and their intersections with pregnancy loss, different intersections of identities cause different feelings regarding pregnancy loss among populations with one or more historically stigmatized or otherwise marginalized identity (e.g. [75,82]). For example, rural Tanzanian women report a need to be surreptitious about their pregnancy losses for fear of social repercussions [75]. Low-income African-American women experiencing pregnancy loss report insensitivity from services including health care professionals and funeral home directors [82]; in one case, a mother missed a burial she needed to help grieve, because a funeral director performed the ceremony sooner than she had been told. Common throughout these studies are the vulnerabilities individuals face when experiencing pregnancy loss that are exacerbated by their other identities.

These studies characterize some LGBTQ people's experiences with pregnancy loss, but few of them discuss the LGBTQ population's coping strategies after pregnancy loss in depth. Some mentions of helpful coping strategies and grief mitigation include support and validation from first responders (in healthcare contexts), a space for a loss survivor to tell their story of the loss in formal support groups or otherwise, and rituals (e.g. writing letters or poems to the unborn, planting a garden) [15]. As noted, pregnancy loss is a common, tragic, and stigmatizing life event that is often silenced, and an overall marginalized experience in reproductive health [129]. Because of the societal barriers LGBTQ individuals face as a result of their identity, such as discrimination and heteronormativity (i.e., the assumption that the majority of sexual relationships in society are heterosexual [80]), LGBTQ individuals experience compounded stigmatization in relation to pregnancy loss [97]. For this reason, it is imperative to have spaces to share experiences and build community without fear of judgment or harm, in order to cope with pregnancy loss. That is not to say that cisgender and heterosexual individuals do not experience some of these challenges (e.g., the financial and emotional toll associated with repeated tries in using ART and then experiencing loss [44]), but as an intersectional stigma lens and the reviewed literature suggest, there are additional layers to the LGBTQ pregnancy and loss experience.

Prior work has explored how pregnant individuals use technologies to manage pregnancies (e.g., [4,25,36,37,132–134]) with some attention to marginalized groups; for example, Burleson et al. [25] note how African American pregnant women, who are three times more likely to die due to pregnancy and who are 57% more likely to experience pregnancy losses, voiced a desire for social support more than medical information, highlighting the importance of accessing meaningful social support. Specific to pregnancy loss, prior work suggests that online spaces dedicated to discussing experiences of pregnancy loss can be a critical part of successful coping and healing for individuals who have experienced pregnancy loss [35]. Yet, this prior work – related to pregnancy and loss's intersection with technology – has largely focused on cisgender and heterosexual individuals [5,9,10,13,85], leaving out the complexities we have reviewed above in LGBTQ people's experiences; for example, although noted in their limitations, Andalibi and Forte's study of disclosure decision-making of pregnancy loss on social media included only one member of the LGBTQ community (i.e., a lesbian woman) [9]. Overall, past pregnancy loss and social media work has explored decision making processes to disclose experiences with pregnancy loss [9,13] and outcomes [5] of such disclosures as well as sensemaking processes [10] and information needs [85]. Because of the intensified and compounded stigma that LGBTQ individuals who have experienced pregnancy loss face [15], and the promise that online spaces can be sources of support and healing more broadly [55], it is important to examine LGBTQ individuals' experiences in online spaces in relation to pregnancy and loss experiences to uncover the benefits and challenges they face in their relationship to technology and managing pregnancies or coping with loss.

2.3 LGBTQ individuals and social media

A growing body of research demonstrates the many ways LGBTQ people seek and create representation in online spaces when physical spaces restrict their exploration or expression of identity (e.g., [78]) as well as challenges they face, for example in relation to impression management on dating apps [18,118]. Accordingly, there is a growing body of research focused on LGBTQ individuals' use of social media to find supportive spaces, an expression of individual resilience as well as development and building of supportive online communities, an expression of collective resilience.

We know from prior literature that LGBTQ individuals make specific use of social media to navigate and form identity [38,45,60,67,71,114,160]. For example, LGBTQ youth curate their selfies on social media as a way to construct a preferred presentation of themselves online [160]. Sexual minority youth find that online spaces are a safer alternative for "testing" identities before they are debuted in the physical world [77]. As another example, "transition bloggers" (i.e. people documenting their gender transition) on Tumblr report feelings of openness and safety, where they could reveal sensitive information about themselves [71]. This ability to disclose highly personal information facilitates community building and empowers trans users [71]. Social media can also serve as informal spaces for LGBTQ people to learn from and teach one another [60]. Research has also explored the duality of social media and the complex ways it simultaneously empowers and limits people with stigmatized and otherwise marginalized identities [29]. For example, Cavalcante discusses the merits of Tumblr for young LGBTQ users, noting the benefits it provides as an oasis of LGBTQ support as well as its drawbacks as they relate to a social enclave where users "inhabit an echo chamber of ideological homogeneity" [29].

Important to note are the ways in which users manage their networks when deciding to disclose certain information. For example, Haimson introduces the idea of "social transition machinery," which describes how people separate their networks via social media and how they orchestrate this network separation to protect themselves during sensitive life transitions [67]. "Social media ecology" describes the ways that people navigate across SNSs (social networking sites) in order to manage their self-presentation as it fits the norms and expectations of a given platform [167]. DeVito et al. employ social media ecology to study the ways in which LGBTQ individuals leverage different social media platforms to avoid stigmatization and context collapse [45]. Context collapse happens when the boundaries between someone's carefully managed social networks dissolve into a single network [109]. For people with precarious separation of social groups online, context collapse is crucial to avoid because of the potential harms a user may face for their stigmatized identity. For example, LGBTQ parents separate personal disclosures across SNSs—for instance, disclosing one's sexual orientation on Twitter but not on Facebook—taking advantage of their social media ecology to maintain privacy on platforms on which they are uncomfortable being "fully out" [19].

Specific to LGBTQ people and pregnancy loss, our prior work drawing on the same dataset analyzed here [137] has demonstrated that the stigma associated with pregnancy loss for LGBTQ people shape their decisions to share or not share about the loss with their networks of known ties, that is people they have pre-existing offline ties with, on social media. However, it remains unclear what role topic- and/or identity-based online spaces where people typically connect to others with whom they have no pre-existing ties, but with whom they share some experience and/or identity, play in the support seeking and coping process after loss for LGBTQ persons.

While SNSs provide a way to manage identity that carves out supportive spaces for LGBTQ users, some people experience stress in these spaces. The design of many SNSs privilege static identities [67]. People going through gender transition on Facebook must work against the design of the platform to edit or erase their "digital footprint" in order to make their transition smoother and preclude context collapse [70]. LGBTQ women self-censor to avoid harassment across platforms where cultural norms vary, demonstrating how these norms are shown to contribute to a technoculture where harassment and platform censorship of certain aspects of LGBTQ identities are commonplace [49]. As such, making decisions about disclosing identity and other personal information can be stressful for LGBTQ people. Stressors include the very decision of disclosing, and how someone's network will respond to their disclosure [69]. Cho [31] reports on instances of family members disowning study participants whose LGBTQ identities were "leaked" to unintended networks as a result of Facebook's design. This sheds light on the harsh consequences that an LGBTQ individual can face as a result of an unintended disclosure.

Further research offers intersectional approaches to understanding LGBTQ people's technology use. For example, LGBTQ university students who are also disabled identify social media as a place to "manage stigma, engage anonymously, explore new identities, establish relationships, build community, raise political awareness, and help others" [119]—effectively crafting an online environment where they feel a shift in control that differs from the physical world. While LGBTQ online communities are generally considered to be positive spaces, they have limitations of their own, as LGBTQ is not in and of itself a monolithic group, but instead includes those with a diversity of identities and experiences. For example, an intersectional look at transgender individuals' lived experiences examines the ways in which trans people struggle to resist dominant LGBTQ narratives of a positive life trajectory following outness—one that makes a narrow assumption of a transgender person's life experiences [68]. Furthermore, bisexual individuals face intracommunity harms in LGBTQ online communities [158]. This work is important for recognizing the gaps in equality between stigmatized and/or marginalized subgroups and how intersectional perspectives offer a more nuanced glance at intercommunity dynamics. One study reports how being part of a Facebook group for transgender women reduced a participant's feelings of isolation but left her vulnerable to harassment from outside users preying on those in the group [2], exhibiting how LGBTQ-specific online spaces can have a double-edged quality to them, where participating in safe spaces may inadvertently put individuals at greater risk of harm. Understanding this dynamic of LGBTQ-specific online spaces complicates their utility and raises questions about how equitable a platform's design is.

In summary, while research at the intersection of pregnancy loss and social media (e.g., [9,64,87,137]) and research around LGBTQ individual's social media use reviewed above both provide us with important insights, our review of the literature highlights a gap in our understanding of the utility of topic and/or identity-based online spaces for LGBTQ individuals experiencing intersectional stigma. In this study, we fill this gap by focusing on conception, pregnancy, and especially stigmatizing experiences such as pregnancy loss for LGBTQ persons.

2.4 Intersectionality and Intersecting Stigmas: Privileges and Resilience

Intersectionality and intersectional stigma. Intersectionality is a critical social theory emerging from Black feminism and critical race theory that allows for an understanding of how multiple social identities such as gender identity, sexuality, race, class, and disability intersect at the level of individual experience to enact systems of privilege and oppression such as cisnormativity, heternormativity, heterosexism, sexism, racism, and classism that operate at the macro level of society [20,21,33,40,112]. Long before being termed *intersectionality* by critical race legal scholar Kimberlé Crenshaw (1989), Black women, including activist Sojourner Truth who famously delivered Ain't I A Woman, were describing their everyday experiences at the intersection of gender, race, and class [20,72]. As such, intersectionality as a theoretical approach addresses the insufficiency of using one source of oppression as the singular cause of health inequity [46]; contrary to unitary approaches which describe on one category of social position (e.g., gender identity or sexual orientation) [72]. As a **critical** social theory, intersectionality can be used to advance social justice by highlighting the voices of people who experience oppression and by drawing specific attention to the manifold structures (e.g., cisnormativity, heteronormativity) that perpetuate and maintain inequality and power [20,33,116].

Carbado, Crenshaw, Mays, and Tomlinson [27] discuss how scholars across disciplines (not including computing) have moved intersectionality to uncover new terrains of what intersectionality can evolve into, noting that there are new power structures the theory can be used to interrogate, and new concerns it can be used to address. They argue that intersectionality as a theory is "never done, nor exhausted by its prior articulations or movements; it is always already an analysis-in-progress." Similarly, Collins and Bilge advocate that intersectionality is a transformative work in progress [34]. Intersectionality has been applied in various disciplines, including social work [100,116], epidemiology [16], political science [72], public policy [73], public health [20,21], and computing (e.g., [24,68,138,145,146]) among others. Regardless of discipline, intersectionality is underpinned by the idea that social identities and social processes are multiple, interdependent, and mutually constitutive constitutive [16,20,21] and attending to social justice and multiple intersecting forms of oppression and power are pre-requisites for an intersectional approach.

A complete review of all the research using intersectionality in computing is beyond the scope of this article; however, following guidelines posed by Rankin and Thomas [139] it is important to recognize the work of predominantly Black woman HCI scholars [152] to intersectional work in computing and HCI. Examples of applying intersectionality in computing include the work of Rankin and Han [138] who examined how various intersecting identities impact Black women's gameplay behavior, considering race and gender as two intersecting identity facets. As another example, Brewer and Piper [24] discuss how a voice-based blogging platform makes an online community more accessible for older adults with vision impairment, considering being an older adult and disability as two intersecting identity facets. Other HCI authors have used intersectionality in the Global South [165] or with marginalized groups experiencing abuse and violence (e.g., transgender people) [145].

An approach to intersectionality that names and analyzes privilege or studies those with privilege, is consistent with scholars such as Yuval-Davis [166] and more recently Moradi [121]. Specifically, Yuval-Davis [166:201] stated that intersectionality as a framework is:

"applicable to any group of people, advantaged as well as disadvantaged. This expands the arena of intersectionality to a major analytical tool that challenges hegemonic approaches to the study of stratification as well as reified forms of identity politics."

Moradi stated that *"disrupting and expanding our vision of intersectionality to address contexts, privilege, and less examined dimensions is critical to realizing the promise of intersectionality"* [121:117]. Cho, Crenshaw, and McCall have similarly noted that intersectionality can be used to illuminate daily forms of oppression faced by marginalized groups, as well as privilege enjoyed by others [32]; for example, intersectionality has previously been used to examine privilege in the context of online ally behavior (see [28]).

Intersectional stigma is a relevant term that can be used to describe the matrix of oppressions a person faces as a result of their overlapping stigmatized identities and experiences [21]. Much of the current research on intersectional stigma studies relationships between people living

with HIV and their intersecting identities that contribute to increased experiences with discrimination, highlighting the idea that intersectional stigma is a barrier to healthcare and social support [142]. In studies observing participants living with HIV, intersecting stigmatized identities are associated with increased psychological distress (associated with conditions such as depression and social isolation) [76]. Intersectional stigma can also be used as a framework for understanding how limited access to social capital influences a population's health outcomes. A study on transgender women in Lima, Peru found that anti-sex worker sentiments and transphobia within a community left trans women involved in sex work at higher risk for HIV exposure [130]. As another example, LGB Canadian women living with HIV report instances where HIV-positive women's groups are not receptive to LGB identities [101].

In addition to the documented stigma and discrimination LGBTQ people experience in reproductive care settings as outlined earlier [26,30,123,141], like everyone LGBTQ people also hold other identities, some of which are stigmatized within reproductive healthcare contexts. For example, in reproductive health settings, research reports stigmatizing experiences among women of color [135], women with disabilities [119], and women of low socioeconomic status [43], as well as women with multiple stigmatized intersecting identities [43,48]. We examine LGBTQ peoples' experiences of pregnancy loss (also associated with stigma [111]), considering the compounded stigmatization involved due to LGBTQ identities *and* loss as a starting point *and* possibly other identity facets.

Intersectionality and resilience. Collins describes power as an "intangible entity that circulates within a particular matrix of domination and to which individuals stand in varying relationships" [33], which suggests that people are not oppressed in all social contexts, across all times and place. Indeed, LGBTQ people regularly exhibit resilience, both individually and collectively, in response to intersecting oppressions. Thus, in the same light, community support can mitigate some of the negative effects of intersectional stigma. Through examining the effects of intersectional stigma on certain groups, research implies that community support can have a powerful effect on a person's wellbeing [154]. Turan et al. reference an example where, among Black American women living with HIV in Chicago, an inclination for activist-oriented socialization was associated with lower viral loads and higher CD4 counts [83]. Similarly, for women with mental illness who face a range of stigmas based on their varying identities (e.g. poverty, homelessness, unemployment), awareness of the structural injustices they face increases empowerment and facilitates an increased potential for accepting their mental illness, yet another expression of individual resilience [120]. Resilience has also been previously examined within an intersectionality framework. For example, Duran examined resilience among queer students of color in response to adversity faced while accessing education from a predominantly White institution. Participant narratives revealed how individual acts of resilience (as an outcome) could be fostered through individual (e.g., critical consciousness about anti-trans/sexual stigma and racism), interpersonal (e.g., familial and peer relationships that affirm queer and racial identities) processes [50].

Resilience researchers have long theorized the important role of social support, and particularly confidential disclosure, with resilience processes [94]. Specifically, they suggests that disclosure and receipt of social support can lead to resilience through: a) fully processing one's feelings and concerns to come to a better understanding of one's traumatic experience; b) elucidation of strategies for coping and validation of self-worth through supportive interpersonal interactions; and, c) building of social capital including both social connections and resources [94].

While researchers have long recognized the role that the physical environment has in promoting meaningful social connections that can contribute to resilience, HCI literature [47,108,157] also details the ways in which social technologies can promote resilience, particularly collective resilience. Dosono and Semaan [47] examined how Asian American and Pacific Islander (AAPI) communities use online platforms such as Reddit to build resilience. Specifically, the authors interviewed 21 AAPI subreddit moderators and identified several mechanisms by which collective resilience was fostered, such as reclaiming space, recording collective memory, and revising cultural narratives. In another study, Vyas and Dillahunt [157] identified strategies for supporting resilience among low income persons through design (e.g., support social opportunities, support sharing of stories). Yet, these phenomena have been understudied in reference to LGBTQ persons' experiences and marginalized reproductive health experiences such as pregnancy loss.

Informed by the literature reviewed here and our formative analysis [87] of these data, in this article, we begin from the standpoint of viewing pregnancy loss and LGBTQ identity as two potentially stigmatizing and intersecting aspects of one's identity and experience. Intersectionality analyses can move beyond intersecting identities to recognize interdependent and mutually constitutive processes of privilege and oppression [34]. In this way, pregnancy loss – while we assert is a stigmatized identity for some as also supported in prior analysis of these data [87,137] and prior work [88,92]– as a marginalized experienced is within the purview of intersectional work. Indeed, other marginalized experiences in which people may or may not adopt an identity – such as substance use – have been extensively studied within intersectionality literature (irrespective of adoption of the 'identity' as an 'injection drug user').

Drawing on McCall [112], we use an *intracategorical* intersectional approach – whereby we focus on a particular social group at a neglected point of intersection (e.g., people who have experienced pregnancy loss, with LGBTQ identity as a neglected point of intersection). Consistent with Yuval-Davis [166], the intracategorical approach allows us to examine both privilege and oppression within the group of LGBTQ persons who have experienced pregnancy loss in online spaces most important to them in relation to the LGBTQ loss experience.

In fact, intracategorical approaches have been subject to critique [166], including in HCI work that engages with intersectionality [139,165]. An intracategorical approach utilizes categories with the underlying assumption that although categories (e.g., LGBTQ identity) are socially constructed, they reflect meaningful aspects of an individuals experience (e.g., while LGBTQ identity is socially constructed, LGBTQ people and communities experience anti-trans and sexual stigma fuelled by cisnormative and heterornormative laws, policies, organizations, etc.) [113,121]. Intracategorical approaches are ideal for examining a marginalized group (e.g., LGBTQ persons) at an understudied intersection of identity or experience (as aforementioned) such as pregnancy loss – which is a stigmatized identity for some and is certainly a marginalized experience. At the same time, intracategorical approaches, in their middle ground, recognize differing experiences within categories (e.g., not all LGBTQ people have the same experiences) and that each individual has their own experience of intersecting stigmas and privileges [113]. As McCall writes with respect to intracategorical intersectionality, "traditional categories are used initially to name previously unstudied groups at various points of intersection, but the researcher is equally interested in revealing – and indeed cannot avoid – the range of diversity and difference within the group" [113:1782]. Thus, the intracategorical approach was useful in our study insofar as while LGBTQ persons who had experienced pregnancy loss were the starting group, we were able to attend to diverse intersections of gender, race, class, relationship, and disability privilege/oppression among participants.

We address the following research question:

> RQ. What benefits and challenges do LGBTQ individuals perceive in pregnancy and pregnancy loss-related online spaces?

3 METHODS

Positionality. Our team's Principal Investigators included members of the LGBTQ community, allies, people of color, White individuals, and members of the LGBTQ community who have experienced pregnancy loss. As far as our disciplinary backgrounds, our team consists of a nurse midwife whose expertise is in providing and studying LGBTQ-affirming care, a social worker whose expertise is in how intersectional stigma shapes healthcare access for LGBTQ people living at the intersection of other marginalized identities/experiences, and

an HCI researcher whose expertise is in HCI, identity, emotions, and marginality. All share a commitment to justice and collaborated meaningfully to challenge each other's assumptions throughout the research process.

Recruitment. In April 2019 we conducted semi-structured individual interviews with participants who: a) self-identified as lesbian, gay, bisexual, transgender, queer (LGBTQ) or another sexual/gender minority person; b) had experienced pregnancy loss in the last two years or been in an intimate partnership in which a pregnancy was lost in the last two years; c) have used any type of social media; d) lived in the U.S.; and e) were over the age of 18.

We recruited participants through a number of personal networks of the Principal Investigators. These ranged from word-of-mouth outreach to social media networks such as Facebook and Twitter, extending to more specific networks such as the Queer PhD Network on Facebook (with approval from moderators). Interested participants completed a brief 5-minute screening and sociodemographic survey in order for us to purposively select participants based on a diversity of identities, such as sexual orientation, gender identity, race/ethnicity, socio-economic status, and social media use. In total, we collected 44 complete responses to the screening survey, 6 of which did not meet the study criteria. We contacted 35 of the remaining 38 participants about an interview, only 17 of whom responded, completed the consent form, scheduled an interview, and completed an interview. The remaining 18 survey respondents failed to respond at various points in the recruitment process due to non-response to the initial invitation, non-completion of consent/scheduling of the interview, or a no show to interview. Table 1 provides aggregate sociodemographic details about interview participants.

Methods. It was important to us that participants had control over the flow of the interviews and sharing their experiences with us. Therefore, we opted for a semi-structured approach. We conducted all the interviews virtually, using the participants' preferred communication tool (e.g., Skype, phone). Interview duration was between 27 and 97 minutes (average: 68 minutes), and followed one of two interview guides: those for participants who had physically experienced pregnancy loss and those for participants who were in an intimate partnership in which a pregnancy was lost. We explored participant narratives using the interview guides, such as general life changes during the process of pregnancy (e.g., "What was your life like when you wanted to become pregnant/become a parent with your partner, and when you found out you were pregnant/expecting?"), online and offline disclosure of pregnancy loss (e.g., "Did you use any kind of technology or social media to cope with your pregnancy loss experience?"), gaps and needs after experiencing pregnancy loss (e.g., "What were/are 2-5 things that you most needed/need afterwards that would have/would help you process your experience? Who/what might have been/would be able to help with meeting these needs?") and social support desires (e.g., "What did/does/would an ideal support network for you in relation to pregnancy loss look like?"). We followed up with questions, as common in semi-structured interviews, about specific examples in using or considering using social technologies, and reasons, benefits, shortcomings, etc. of such use/non-use. Interviews were audio-recorded and transcribed verbatim. Before the interview, the interviewer asked that participants fill out an online informed consent form. Upon completing the interview, participants were given a $25 gift card honorarium. Our institution's IRB approved all study procedures and classified the study as exempt. Additionally, we followed best practice guidelines for interviewing bereaved individuals [81] as adopted for online interviews. These guidelines are helpful in being sensitive to participants' needs during the course of the interview and include signs of different stress levels that an interviewer can respond to. For instance, when relevant, we asked participants if they would like to pause (or end the interview) – no one did.

We included partners in this study as individuals who are in relation to those who experience direct stigma still experience *secondary stigma* [127] or what is referred to as *stigma by association* [65]. At the same time, cisgender women whose partners have experienced pregnancy loss are subject to the same intrapersonal stigma related to 'failing to live up to one's reproductive expectations' as rooted in patriarchy. Furthermore, individuals such as those we interviewed engage in complex decision making around what person in the partnership should carry the pregnancy, adding a layer to pregnancy and loss different from heterosexual persons. No two participants in the study were partnered with each other.

Analysis. We used the constant comparative approach [149] to uncover inductively-generated themes, facilitated by the use of the software Dedoose. To start, four members of the study team independently open-coded the same three transcripts. They then met to discuss the data and generate a code list. Next, one researcher continued open coding the remainder of the transcripts using this initial set of codes, meeting bi-weekly with another researcher to discuss the coding process, refine codes, and conceptualize themes. Based on these discussions, the same researcher then developed overarching categories that incorporated the codes. Finally, the three other researchers reviewed the codes and themes in detail and further conceptualized broader themes.

This project is part of a larger project concerned with LGBTQ people's experiences with pregnancy and loss, and in particular use/non-use of online spaces to navigate pregnancy and loss experiences. In the analysis presented in this paper, we looked at LGBTQ individuals' experiences with pregnancy and pregnancy loss to examine the particular challenges they face both in-person and on social media, with a particular attention to coping with pregnancy loss. Our analysis related to social media focused predominantly on one type of online space that was most important to participants in relation to the challenges they faced in their pregnancy experiences including loss: Pregnancy and pregnancy loss related Facebook groups, some of which were specific to LGBTQ individuals and some were not. We did not set out to focus on these online spaces in particular, as we did not know what online spaces would be important to participants in one way or another. However, in the process of collecting and analyzing our data, we learned that Facebook groups played a unique and central role in coping for participants in relation to pregnancy loss and navigating the pregnancy experience more broadly. Therefore, the analysis presented in this paper focuses on these spaces and does not include all the themes we developed in our bigger analysis process as described above.

Overall, intersectionality provided a foundational framework where we examined the data through a lens of intersecting privileges and oppressions. For example, when we examined the theme about participants' experiences in LGBTQ-specific pregnancy and loss-related groups, as seen in Findings, we read with a critical eye to identify belonging and visibility processes which impacted participation and finding support outcomes. Moreover, an intersectionality lens informed our design exploration suggestions. In this way and by focusing on the pregnancy loss experience, our intersectional analyses moved beyond demographic aspects of identity to include systems of privilege and oppression both socially and technologically

Limitations and Reflections. Our sample included majority white, cisgender, partnered, educated, employed, and urban women. Additionally, 10 participants earned more than $75,000 per year. Our sample's limitations reflect an intersecting system of classism and racism that privileges wealthy LGBTQ people. As reviewed in [22], intersecting racism and classism make it less likely that LGBTQ people of color are accessing conception support or reproductive health care as pathways to parenthood. This in turn shapes who experiences biological pregnancy and thus loss, and thus who may be more likely to be part of a study like ours. Additionally, same-sex couples of color are more likely to be poor, less likely to own homes, and more likely to not have access to health insurance compared to White counterparts [42]. What data is available suggests that parenting children from prior heterosexual unions or parenting children within communities and extended families are more common amongst LGBTQ people of color compared to biological parenthood [150]. As we also saw in our previous analysis with the same participants [87], there are significant financial challenges associated with conception and pregnancy for LGBTQ people. Thus, despite our efforts, we were unable to recruit more diverse participants. It is worth noting that some LGBTQ people access pregnancy outside of fertility clinics and the medical system which tends to be less expensive (e.g., a person who accesses sperm from a family friend and inseminates at home). While our recruitment strategy did not preclude us from having reached these potential

participants (and indeed some noted using these methods, especially after a loss), future work could more intentionally engage with folks who use diverse methods.

Intersectionality, the guiding framework for our work, is ultimately about understanding intersecting systems of power; it can help us better understand experiences of privilege, not just oppression. The majority of participants in our study benefited from race and class privilege and yet were disadvantaged through cisnormative, heteronormative, and patriarchal institutions that denigrate their lives, their methods of reproduction, and ultimately their losses, as well as loss as a marginalized and often stigmatized reproductive health experience more broadly. Even so, we learned important things in this study, including about the lack of representation in online spaces for LGBTQ people of color seeking help with conception, pregnancy, and loss. Moreover, as we will demonstrate, our few interviews with those not from those dominant categories, such as with women of color, richly demonstrated their experiences at the intersection of a marginalized race/ethnicity and sexual orientation. While this inequity in accessing support merits further investigation, it is important to highlight the evidence that we do have especially given how the Black participant in our study created a group for other Black people, highlighting this was not a need just for one person. We suggest that it is important for intersectional work in the future to probe for both experiences of oppression *and* privilege. It is also possible that our recruitment methods shaped who ended up being a screening survey respondent in our study. We hope for our and others' future work to more robustly engage with more diverse life experiences and identities. We do note however, that the call for participation was widely shared outside of our individual networks. For example, the first tweet gathered 4920 impressions and 156 engagements (although unfortunately we did not gather these numbers prior to recruitment ending). While the Facebook group we posted in meant reaching people in academia, it meant that they were beyond our own networks as well. No participants were people in our individual networks. However, this is still a small sample with limitations, and findings may not generalize across axis of gender, race, relationship, or class without further explorations. Future studies may consider recruiting through clinical or community partners in order to include more diverse voices, and collaboratively explore design opportunities informed by the present work. Indeed, intersectional invisibility is not only present in practice, but in research as well. Moradi [122] uses the term *intersectional invisibility* to refer to the recruitment and analysis of a prototypic minority person (e.g., in this case, a white, upper-middle class, cisgender sexual minority women). Future HCI research on this topic conducted with an intersectional lens should take greater care to recruit those with multiply marginalized identities, particularly LGBTQ people of color, drawing on suggestions from HCI researchers [139] to deepen intersectionality work (e.g., building coalitions) – we see community and organizational partners serving diverse areas as a potential for reaching more diverse potential participants. We note that such an approach in this case may then be more bound to particular geographies, which would be insightful but have other shortcomings.

Factors	Mean (SD) or N (Proportion)[a]
Pregnancy loss experiences	
Pregnancy loss experience	
Physically experienced pregnancy loss	14 (82.4)
In an intimate partnership in which pregnancy loss occurred	3 (17.6)
Year in which pregnancy loss occurred	
2019	4 (23.5)
2018	8 (47.1)
2017	5 (29.4)
Sociodemographic characteristics	
Age	34.4 (3.3), Range: 29 to 40
Gender identity	
Cisgender woman	15 (88.2)
Transmasculine person	1 (5.9)
Non-binary person	1 (5.9)
Sexual orientation [b]	
Lesbian	7 (41.2)
Bisexual	3 (17.6)
Queer	10 (58.8)
Asexual (biromantic, demiromantic)	2 (11.8)
Race [c]	
White	13 (76.4)
Black/African American	1 (5.9)
Latinx	1 (5.9)
Multiple races/ethnicities	1 (5.9)
Human	1 (5.9)
Ethnicity [c]	
African American	1 (5.9)
White	7 (41.2)
American	2 (11.8)
Jewish	1 (5.9)
Latinx (Hispanic, Mexican, Salvadoran)	2 (11.8)
European	3 (17.6)
Multiple ethnicities	1 (5.9)
Relationship	
Married	16 (94.1)
Single	1 (5.9)
Education	
College	4 (23.5)
Graduate Degree	13 (76.4)
Income	
$1,000-$29,999	2 (11.8)
$30,000-$49,999	1 (5.9)
$50,000-$74,999	4 (23.5)
$75,000+	10 (58.8)
Religion	
Nothing in particular	9 (52.9)
Agnostic	2 (11.8)
Jewish	2 (11.8)
Unitarian Universalist	1 (5.9)
Protestant	1 (5.9)

Multiple religions	2 (11.8)
Geography	
Urban (>50,000 residents)	14 (82.4)
Rural (<50,000 residents)	3 (17.6)

Table 1. Participant information

4 RESULTS

We report on two overarching themes based on our analysis in response to our research question: 1) the benefits and challenges of LGBTQ-specific pregnancy and pregnancy loss-related social media spaces for LGBTQ people who have experienced pregnancy loss; and 2) the benefits and challenges of non-LGBTQ-specific, pregnancy and pregnancy loss-related social media spaces for LGBTQ people who have experienced pregnancy loss. Throughout, we utilize intersectionality as a theoretical framework and the construct of resilience to elucidate experiences of intersecting stigmas/marginalizations and privileges at individual, interpersonal, and structural levels, as well as individual, interpersonal, and collective resilience. As a reminder, while we did not set out to focus on any particular online space when conducting the interviews and we explicitly asked about multiple online spaces (e.g., Instagram, Reddit, etc.), topic- and/or identity-based groups emerged as playing an important role in coping after pregnancy loss and managing pregnancy experiences more broadly.

To provide context to the participants' quotes, we provide relevant identity information the first time a participant is quoted in the following order: race, ethnicity, gender, sexuality, partnership status, and income. Participants described themselves in their own words and that is how we report their attributes. When they described their race and ethnicity with the same words, we only report this information once.

4.1 LGBTQ Individuals' Experiences in LGBTQ-specific Pregnancy and Pregnancy Loss-Related Spaces on Social Media

In this section, we describe the benefits and challenges participants perceived in online LGBTQ-specific pregnancy and loss-related spaces. Benefits primarily focus on the importance of a space that operates at the nexus of LGBTQ identity and pregnancy loss experience, which was experienced near ubiquitously among participants, although sometimes also shaped by privileges (e.g., Whiteness). That said, some experienced challenges to realizing these benefits; in discussing these challenges we highlight intersecting experiences of exclusion based on gender identity, race, and partnership status among other facets.

4.1.1 Benefits of being in LGBTQ-specific pregnancy and loss-related online spaces

A shared sense of identity and experience with other members leading to a supportive online community. Some participants felt as if they had, upon joining a group like this, entered into a community of like-minded individuals to whom they were connected by way of similar identities, backgrounds, and experiences. For some, this felt like they were known and seen—like they belonged in and were validated by the group. For example, P9 (White, female, queer/lesbian/gay, Married, 75K+) described feeling included, "*I think in the queer group I feel because there's we do have this shared identity I think that there is actually less of what I would describe as an anonymous feeling*". A sense of belonging to a group specific to someone's intersectional identity and experience (in this case, being LGBTQ and experiencing pregnancy loss as explicit components) provided opportunities for support and validation [88] that may not be as accessible in other online spaces such as one's personal Facebook timeline or Twitter account. Membership in spaces that explicitly affirm participants' LGBTQ identities—where nuanced intersecting experiences of pregnancy, conception, and loss are understood and shared, compared to non-LGBTQ-specific online spaces—made participants feel seen and more engaged with the group. In this way, the process of seeking out and joining an LGBTQ-specific pregnancy and loss-related online space fostered both individual (e.g., sense of self-worth) and interpersonal (e.g., social support) resilience.

These shared identities of both being LGBTQ and having experienced loss, also meant that participants experienced some shared understanding of the difficulties an LGBTQ individual faces before, during, or after pregnancy and loss. Not surprisingly, participants noted these LGBTQ-specific groups tend to be understanding of challenges related to experiencing TTC, pregnancy, and pregnancy loss while LGBTQ. Participants mentioned that members of this type of LGBTQ-specific group were able to offer support and advice, recommendations and affirmations, because they themselves truly understood the healthcare, logistical, financial, social, and personal challenges related to TTC, pregnancy, pregnancy loss, parenting, or postpartum while LGBTQ – challenges [87] they faced. For example, P14 (Latinx, Mexican and Salvadoran, female, queer, married, 50-75K) recalled:

"*For me to go through the trying to conceive process, it's a very unique experience that only other queer people experience in the same way. In terms of dealing with accessing medical care or accessing competent providers or accessing sperm or accessing the ability to conceive, so those are very specific experiences navigating those systems as a queer person.*"

P14 continued, "*... I would go to the [queer-specific] Facebook group ... even to just say, 'This is what's happening. I'm so tired of this process, it's so difficult and I just need to rant.' Just being able to rant and have somebody understand where you're coming from that's been there, it felt really important to have that space.*"

Participants noted how this shared sense of identity (i.e., being queer and experiencing pregnancy loss) and community lent itself to situating this type of group as supportive and trustworthy to those participating members. As P14 further elaborated:

"*To share [my experiences] with other people that have been there that have also shared their experience, that have also been vulnerable in this private group and in a closed group and in a pretty public way felt like okay, I'm in good company. I'll be supported, I'll be helped it felt like there was trust in the group to be able to hold that.*"

Having a place to "*blow off steam*" where there is a sympathetic and responsive audience with shared identities and experiences in light of challenges unique to LGBTQ individuals was beneficial for participants and these Facebook groups provided that place. To that end, the online spaces in which these participants interacted could be viewed as resilience-promoting environments in which both emotional processing was encouraged/validated and useful, relevant, resources were readily made available. While there is vulnerability in sharing one's loss experience, knowing that the audience would understand their experience by virtue of having experienced loss themselves *and* being queer provided feelings of safety and trust.

A shared sense of identity and experience with other members leading to an inclusive, affirming, and safe online community. Because most members in LGBTQ-specific spaces had a shared sense of identity and community as described above, they felt relief in being able to safely assume that other members would effectively empathize with their experiences. As P12 (White, cisgender femme woman, queer/lesbian, married, 75K+) shared: "*I think there's just something about knowing that the other people in the group are going to get or going to understand what we've all gone through to get to.*" Participants comparing LGBTQ-specific groups to non-LGBTQ-specific groups mentioned feeling more comfortable in LGBTQ-specific groups. This was because, due to some shared sense of identity amongst members,

they knew that other members would understand their own or their partner's gender and/or sexual identities, if relevant, and their LGBTQ family structures; they felt they wouldn't be subject to intrusive or basic questions about their own or their partner's identities as related to pregnancy, conception, and loss. For example, P4 in relaying their own experience, described how "*Nobody is going to throw out a 'what-does-that-mean' question if I mention my husband transitioned 15 years ago... There's also that comfort level,*" noting how the perception that anti-trans stigma or cisnormativity experienced in non-LGBTQ spaces would not follow them in these safe LGBTQ spaces.

Similarly, P7 said:

"*... I can assume that these people understand some basic things about our family structure and family experience. It's nice just to not have to explain my family structure, or have people assume pronouns of my spouse or anything like that. I'd say primarily I use it and enjoy it because it's a space of visibility. It's a space where I don't have to feel like an outsider when I'm thinking about my family, which is really helpful, especially if you're asking questions or seeking advice, or even just other peoples' experiences with things.*"

In this way, connecting to others who did not require explanation and education about the LGBTQ family structure and reproduction was key in feeling like one could both be visible as who they were in that space, but also seeking support.

As another instance, P2 (White, Caucasian, female, lesbian/queer, married, 75K+) mentioned that it felt like these types of groups were "*safer ... and more compassionate space[s]*" than non-LGBTQ-specific alternative groups that were about pregnancy, conception, and loss because they know that other members in the group understand—or have even lived through—their own experiences due to both being LGBTQ and conception, pregnancy, and loss experiences. Prior research [71] shows how sense of belonging is crucial for creating meaningful experiences. We highlight the safety, visibility, and openness that LGBTQ people felt when they were part of a community of other LGBTQ people they knew are also going through similar experiences, in this case intersecting experiences of conception, pregnancy, and loss.

A point of research through question asking, answering, and lurking. Participants felt that having a safe and trustworthy group to turn to, one that understood their unique LGBTQ identities and intersecting conception, pregnancy, and loss experiences was a powerful source of support and research during uncertain and difficult times in relation to loss. Specifically, participants mentioned using LGBTQ-specific groups as a way to conduct research about their personal situations and, in some cases, to get a "*sanity check*" that what they were experiencing was typical or what they were feeling was valid. Sometimes this research took the form of asking questions in a post, and other times sifting through others' posts and comments to find relevant information without posting. Participants also reported providing answers and support to others based on their own experiences.

Participants found LGBTQ-specific Facebook groups concerning TTC, pregnancy, and pregnancy loss experiences helpful to conduct this type of research because they were generally assured that most other members would have experienced what they were currently experiencing, and so would be able to offer genuine support or actionable advice from a place of understanding and lived experience.

P14 recalled a positive experience with information-seeking, saying, "*I would also post there ... if I had a very specific question that I didn't know the answer to and I thought that they would be able to help me with. I would post on there about whatever questions I had and usually I would get a good response.*"

This type of LGBTQ-specific Facebook group that P14 refers to could be considered an informal learning and teaching environment [60] where an LGBTQ individual feels comfortable asking questions, and where other LGBTQ individuals can offer answers based on relevant experience and identity in tandem. As such, participants in our study noted how these environments and their educational dynamic are particularly valuable to LGBTQ individuals.

Others such as P7 (White, female, lesbian, married, 1-30K) mentioned participating in both sides of answering and asking questions about loss within their LGBTQ parenting group: "*It's actually a fairly small group [LGBT parenting group]. You can kind of follow their families. And I have shared stuff personally. I've used it as a platform to ask questions, and other people will as well. So, I'll sometimes share what worked for us.*" Indeed, what was key here for this participant's participation in this group was both experiences with expanding their family through conception and being LGBTQ, not just one or the other.

These LGBTQ-specific spaces provided trustworthy alternatives to more generic means of information-seeking for many participants. Some mentioned preferring to do this type of research within this type of LGBTQ-specific group because search engines like Google often proved fruitless, returning results that were generic or assumptive. As P14 said:

"*If I went on Google and researched whatever random topic I was looking for, it would always be a lot of forums from the UK, it was very random, or Australia. It was just very generic and general and so I would go to the Facebook group to see what questions I had.*"

Specifically, participants noted benefits from "lurking" in groups—a word used to describe people online who primarily view and observe information but do not contribute content. As P14 further described:

"*Yeah, I search through them, so at any point of the process they could talk about, the main one I used to use was, or still do actually, it's [name removed: a support group for LGBTQ people trying to conceive]. It's just like a wealth of information because people have talked about everything about the process that's unique to a queer person. It's really not just queer people in general but it's very more specific to queer women in particular and their journey of trying to conceive.*"

In this sense, some participants were able to find helpful information just by having an account and access, without any active participation or contribution required, which can lower the barrier to find help in dire moments of need. What was helpful was the ability to seek information that was deemed relevant to queer persons' experiences with conception, pregnancy, and loss without needing to actively participate by providing content, or disclosing personal information and sharing stories of loss. The ability to search for information and for the information to be archived in a searchable manner were also important in making this a fruitful approach.

Moreover, participants reflected on how knowledge gained through these LGBTQ-specific groups had direct implications for their pregnancy experience. As P6 (White, married, female, bisexual/biromantic, 50-75K) described:

"*When I came out of my fertility clinic being told that IVF was my only option, that my fertility clinic IVF costs $16,000 before meds, and meds are often $5,000. For someone who was having trouble making IUI work financial, I was just devastated... and I went on to this [name removed: a support group for LGBTQ people trying to conceive] group like, 'I think this is the end of my journey because I can't afford this thing.' So many people were like, 'Have you tried [specific clinic]? Have you looked into XYZ? Here's a link to this meds group where people offload meds that they don't need anymore for less than what you would buy from a pharmacy.' Having people that were able to ... I went from hopeless to having a direction. Directionless to having a direction very quickly after the ectopic, and I didn't expect that. It was due solely to the people in the [name removed: a support group for LGBTQ people trying to conceive] group. If I hadn't had that, then I don't know where I would be right now.*"

As an LGBTQ person, finding health care professionals and organizations who are sensitive to the reproductive needs of LGBTQ people can be challenging [122], as can navigating the financial barriers to conception as we see here. In this case, P6's socio-economic status together with being LGBTQ and having experienced a loss needed the type of support and resilience that the group was able to provide

them. The group provided support through offering advice and resources they could reach out to for tangible support (e.g., medications), ultimately leading to reinstating hope and resilience. Participants' accounts illustrate the importance of participating in a space where they feel comfortable asking questions and offering their own experiences helping others navigate uncertainty, while also being able to read prior content without adding new content themselves. They report how, in LGBTQ-specific groups, there is a sense of shared understanding, where others are less likely to make assumptions about one's journey to parenthood. Sharing and receiving information is a powerful way to build community, facilitate meaningful connections, and problem-solve challenges/blocks to conception regardless of where one is in their journey.

An interconnected network of LGBTQ-specific groups. Further contributing to the shared sense of identity and community described above is an interconnected network of LGBTQ-specific Facebook groups that allow members to join different groups under the network umbrella relevant to their personal TTC, pregnancy, or pregnancy loss circumstances. For example, P9 commented on how the interconnected nature of Facebook groups helps form a strong community:

"Now one of the really nice things about this group is [that] they have a group that you can then get into when you are pregnant and then they have a postpartum group for after you give birth. So now that I'm pregnant again, I've moved into that next group. It's really nice to have that community ... to have people who understood that and had that experience themselves and be able to comment on that and talk about it."

On a similar note, P7 said the group had *"a cohort feeling about it,"* and this was beneficial insofar as it allowed a relatively close-knit community to develop around shared identities and specific stages in respective journeys. Similarly, P4 (White, American, femme, queer, married. 75K+) noted how crucial the nested communities were for them:

"Those groups, that little cluster of related groups has been a lifeline for me for sure, and because you are following along with people's every try when I lost the baby that was ... those same people were my support, because a lot of them have been there."

Participants' accounts demonstrate how network fractals, or branches, that cover ever-more nuanced identities and experiences help facilitate expanded support systems. In other words, these findings suggest that being able to find and access groups that are representative of multiple dimensions of identities and experience is important in the ability to find meaningful support when needed. Following along group members' journeys who were at the same stage in the TTC, pregnancy, and loss journeys provided a sense of connectedness as members knew each others' stories up to that point.

4.1.2 Challenges of being in LGBTQ-specific pregnancy and loss-related online spaces

As described earlier, most participants commented on the benefits of joining and/or participating in LGBTQ-specific groups related to TTC, pregnancy, and pregnancy loss. However, these benefits were likely also shaped by privileges like those related to race and class. In other words, while they experienced oppression due to being LGBTQ and the desire to having a biological child leading to a loss in tandem, some were also privileged along other identity facets. In fact, participants also faced challenges associated with these groups, as we describe next.

Lack of representation and visibility of identities and/or experiences. Participants shared that some larger groups did not address the specific needs members might have related to their personal identities and experiences. In response, a few participants mentioned that they ended up creating or helping to create offshoots of larger LGBTQ TTC-, pregnancy-, and pregnancy loss-related Facebook groups that were focused on specific experiences or identities – a form of resilience.

For example, P1 (African American, Black, woman, bisexual, married, 75K+) needed support and joined pregnancy loss-related support groups for LGBTQ people. She noted:

"It was just a huge lack of visibility, that was striking to me to be in these groups and we went to other groups to see if it was maybe the region that we live in that maybe that was why there was no Black people in that group but there were no Black people in the other group either. And with knowing the frequency, the whole one in four thing for miscarriage..., knowing how common perinatal loss is, I was like, 'There is no way that we should not be here. So, I don't know what is happening, but this lack of visibility is problematic for me.' And it just made me ... like I said, just made me feel very other-ed and I felt like I just wasn't connected in some ways to some of the people that were there if I didn't really understand ... our blackness and our queerness. I feel like we were not seen and that's not helpful I'm in this place to try and get some support."

P1 further elaborated: *"So then I just started to need online support groups and that was okay for a while but also like I said, same thing with the ... we're just feeling kind of other[ed], that just didn't feel the greatest. So, then I just created my own group on Facebook. And that helped and that's been really where I've been getting most of my support—from those."*

P1 continued, noting the new group's significance: *"It's just been a space that has provided a lot of solidarity; there definitely are some people who identify as queer or just as not-heterosexual. And it's just been like a nice space to process what has happened to all of us [loss] and to support the other people in the group. I would say most of the people in there identify as cisgender, so it's mostly women, but just to connect with other people, other women, in that way about this experience of loss and also to provide resources and support and healing opportunities for people."*

This participant created a new pregnancy loss support group for LGBTQ people of color, because the lack of visibility they felt in online support spaces that only recognized two identity and experience facets (i.e., being LGBTQ and pregnancy loss) meant they did not feel included, recognized, and therefore could not get the support they needed. Just similar to how P1's experience of loss could not be separated from them being LGBTQ, their experience of loss as an LGBTQ person could not be separated from them being a Black person. This example highlights the key need to create spaces for identities and experiences in tandem, and recognize that not all online spaces deemed to be supportive are supportive for all to the same extent. While this is only one participant's experience and future work should explore ways to better reach Black LGBTQ people who experience pregnancy losses, this is still a valid and important experience. Additionally, we see that by proxy other people who were not part of this study joined the group P1 created, as presumably it tapped into a desire for a space that explicitly acknowledged all of the important aspects of their identities (i.e., race, loss, LGBTQ status).

As another example, P5 (White, Ashkenazi and Eastern European Jew, non binary trans, queer/bi/pan, married, 50-75K) mentioned creating a small group meant for people who have experienced pregnancy loss as an offshoot from a larger, LGBTQ-specific pregnancy-focused group, noting that the larger group's focus was not sufficiently specific or inclusive:

"I've ... joined three or four different groups geared towards LGBT and trans people trying to conceive and with babies and breastfeeding, and I couldn't find one that was good specifically about loss and miscarriage and I actually started one. ... So, I just started a group and basically posted ... 'I started this thing, PM me if you want in', and [I] invited all of the people who sent me a message."

This is an example showing how the LGBTQ-specific pregnancy-focused group, while likely met the needs of some members whose pregnancies proceeded as desired, and while was inclusive of trans members, did not seem to recognize pregnancy loss as a related experience, and as such they created their own space focused on LGBTQ and loss.

P5 noted that their group has not grown very much since its creation:

"It's not very, hasn't been very active or successful because I started it because I couldn't find one and wanted that resource to exist and tried to be really explicit, like I'm going through the work to make the space exist, but I am not going to admin it or promote it or do any ... not interested in that, I just created it and invited some people and said, 'Here you go'. And nobody's admin-ing it or doing any of that sort of work, so it's kind of somewhat defunct, but it exists."

Even though there clearly was a desire for this space, the effort required and the difficulty maintaining and moderating groups meant that the space did not serve its intended purpose. P5 further elaborated that they wanted to avoid continually discussing loss within original, larger LGBTQ-specific pregnancy-focused group:

"I think mostly that I didn't want to hijack the other groups to be just about loss ... Seeing other people in my group struggle and clearly not have the space they need. Someone else made a comment of, 'does anyone know if this sort of group exists?' And in the thread several people said 'no, I haven't been able to find it', 'no, it doesn't exist', and seeing that other people were needing that space and no one knew of one, said 'okay, I'll make it.'"

Discussing pregnancy loss as an LGBTQ person was definitely a desire that was not being met in generic LGBTQ-specific pregnancy groups, pointing to how even though receiving support and solidarity for other pregnancy-related experiences was possible in those spaces, a neglected point of intersection became relevant when some members experienced pregnancy losses. We also see how maintaining and moderating these spaces also be a form of labor that not everyone may be up for; it is not just recognizing a need and creating a space for it, but also sustaining participation and managing the space that is important. The further development of specific spaces for healing and affirmation both constituted an expression of as well as fostered collective resilience of sub-populations of the LGBTQ community with shared identities and/or experiences.

Smaller, hyper-specific subgroups also present their own challenges. Group members' range of experience is more limited due to the specificity of membership, whereas members in the broader groups have a wider range of experience. For example, as P5 noted:

"and even the one that I created, that does not fulfill all of what I need either. That's specific to talking about loss but I also want to talk about the trying to conceive stuff and the resources that I get from that massive group with a few thousand people in it; there's such a wealth of knowledge in that group, that I couldn't get from any of the smaller groups that focus only on my specific identity too."

Important to note are the mix of positive effects of forming and participating in these sub-groups as well as the challenges some participants faced to find representation, solidarity, and meaningful support. While some participants were able to form groups more representative of their identities, that meant the chances of finding someone to watch over and act as an "admin" for the group or discussing other aspects of the pregnancy journey were smaller. P5's experience sheds light on the particularly troubling aspect of being caught between two spaces: one that is not specific to intersections of one's identities and experiences, and one that is too small to sustain and lacks other desired content.

As another example of participants not having their needs (e.g., informational) met in some of the online LGBTQ-specific spaces, P10 (Asian and White, mixed, cis female, asexual and demiromantic, married, 75K+) whose partner was a transgender woman who carried the sperms they needed to use, said: *"Like we don't have any questions about which one of us is going to carry the baby. Or where we're going to get sperm from."* Unlike many of the folks in LGBTQ-specific spaces they did not have questions or concerns about who would physically carry the pregnancy. As such the intersections of experiencing a loss, being an LGBTQ person in a partnership with a transgender woman, meant that the majority of the LGBTQ-specific online spaces about pregnancy and conception, with majority cisgender and lesbian partnered couples in them, did not share their concerns and experience. Consequently, P10 found herself more on non-LGBTQ specific groups, but as we will see later, those spaces are also invalidating in other aspects for LGBTQ persons in the pregnancy, conception, and loss process.

This general type of pregnancy or loss-related LGBTQ-specific groups still makes assumptions. Participants still experienced harmful assumptions that rendered stigmatized experiences (e.g., non-partnered conception/pregnancy/parenting) invisible. One participant mentioned that they are not partnered but found that many of the conversations taking place in this type of LGBTQ-specific groups, no matter the relevant stage (but particularly those stages before birth/parenting), assumes that all members are going through the given stage with a partner. This was harmful to their feelings of belonging to the group and thus hindered finding support and solidarity. As P13 (White, Western/Northern European, female, bisexual/queer, single, 50-75K) explained:

"So, there are a lot of conversations about how your relationship suffers when you're trying to conceive and, 'What are you guys going to get your non-feminine partner for Mother's Day? Or, are you—What name are you going to use?' ... I don't have a partner, I'm not making decisions with them, but I'm also not getting support from them ... That's why I hope at some point I can really be a part of that 'queer solo parents group' as a parent because I feel like that's the piece that's missing."

P13 explained later that, while they are a member of the LGBTQ solo parents Facebook group that they mentioned, they don't necessarily *feel* that they *belong* in such a group. At the time of the interview, they were a foster parent to older teenage children: *"It doesn't feel so much like parenting as it does renting your room out. I have this much authority, but nobody thinks of me as a parent, including myself."* P13 hopes that they will feel a sense of belonging in such a group in the future, though, whether they have their own children or foster younger children: *"At some point I'll foster a kid that's young enough that they're mine instead of their own and their parents that they've lived with for 16 years or whatever. But right now, I'm not really parenting, so I don't really live there [in that 'queer solo parents Facebook group']."*

Even though P13 fits the criteria for membership in a group where they could potentially feel supported, the dominant narrative in the group (conception, pregnancy, partnership) made them feel excluded because they were not partnered nor did their fostering a child felt like enough of a membership card to them and as they remarked, to others. This is an example of how assumptions within the context of LGBTQ-specific groups, deemed to be supportive, can make some members feel alienated if their situation does not fit neatly into the group's primary narrative. In this case, the intersection of being LGBTQ, experiencing loss, not being partnered, and exploring parenting routes other than biological pregnancy (i.e., fostering) made it difficult for this participant to feel included in spaces that although were inclusive along the axis of LGBTQ status and pregnancy and loss, did not feel inclusive along axis of partnership or fostering status, hindering their ability to garner the support they needed.

LGBTQ Individuals' Experiences in *non*-LGBTQ-specific Pregnancy and Pregnancy Loss-Related Spaces on Social Media

Here, we describe the benefits and challenges participants perceived in non-LGBTQ-specific pregnancy and loss-related spaces.

4.1.3 Benefits of being in non-LGBTQ-specific pregnancy and loss-related online spaces

Few participants mentioned joining or participating in non-LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related Facebook groups. Those who did join one or some of these types of groups had different reasons and anticipated or perceived benefits for doing so, which we describe next.

Finding information and resources that do not pertain to being an LGBTQ person. Some participants found non-LGBTQ-specific groups useful for finding basic resources that were commonly needed across LGBTQ and non-LGBTQ persons. Yet, for some, their experiences

within non-LGBTQ groups were tempered due to their LGBTQ identity. For example, P7 talked about joining a local non-LGBTQ-specific parenting group to ask for recommendations but noted that they wouldn't participate in discussions as openly as they might in an LGBTQ-specific group:

"I'm in some local things. Primarily, who's a pediatrician you could go to, or like what's an indoor place I can take my child on this terrible rainy day? I don't think I've ever posted anything in any of them. I've sometimes searched them for different resources that are local, but I definitely don't participate in them really at all, and I wouldn't participate them in the same way that I do in the queer parenting groups, where I would be more honest or open or vulnerable that like challenges that I've had."

P7 shares how the non-LGBTQ-specific group helped point them to basic resources that parents or expecting parents could take advantage of. However, P7 implied that non-LGBTQ-specific groups serve mostly as a utility rather than a place for them to share about themselves, exchange support, be visible, or build community and solidarity precisely because to achieve those goals they would need to be connected to others who are at similar identity and experience intersections, not available in non-LGBTQ-specific spaces.

Moreover, participants noted how informational benefits of lurking might exist to some extent in non-LGBTQ-specific spaces, and how the emotional and community support aspects will not transfer. As P13 said:

"If you're just a lurker, yeah you could get information, but you're not actually getting support because nobody knows you. And you can't get support from reading other people's experiences, you can only get support from connecting with somebody else. As long as you post, even if it's like, 'Oh man, I'm so frustrated.' Or like, 'How ironic that this happened this month?' Then people start to know who you are and you become a regular and then you're part of the support part. If you're just reading, it doesn't feel like support to me, it just feels like information, and that's how I am in the other [non-LGBTQ-specific] groups."

In this sense, these non-LGBTQ-specific spaces were sometimes useful to get non-LGBTQ specific information regarding pregnancy and loss, but not useful for finding community or meaningful, deep, connections due to lack of representation of LGBTQ stories and experiences as intersecting with pregnancy and loss.

While in non-LGBTQ-specific Facebook groups, some participants reported being vague and withholding disclosures about their or their partners' (if existing) personhood while at the same time gaining access to information relevant to their status. For example, P16 (White, cis women, queer, married, 75+) mentioned joining a Facebook group meant for people with fertility issues—and so never felt it was necessary to share additional information about their LGBTQ identity:

"I actually never shared. They [the group members] knew I was doing IUI, but I never talked about why. I might've even mentioned donor sperm at some point, I don't remember, but I never ... part of it is I didn't wanna out my partner. So that's always a challenge in being like, 'I'm queer, here's my husband,' and letting people just kind of guess, I guess? They probably just assume I'm bisexual which is fine, I don't really care, but yeah, no, I don't think I ever really shared in that space."

By limiting the information that they shared, P16 was able to receive some resources about the IUI treatment that was technically common with some members of the infertility non-LGBTQ-specific Facebook group, again highlighting how certain, yet not all, purely informational needs can be similar between LGBTQ and non-LGBTQ people during the pregnancy journey, but that the emotional and community aspects of the experience seemed to be harder for participants to connect over with non-LGBTQ people because of the lack of LGBTQ identity overlap.

4.1.4 Challenges of being in non-LGBTQ-specific pregnancy and loss-related online spaces

Many participants mentioned avoiding non-LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related Facebook groups altogether. Most of this deliberate avoidance, according to participants, was based in the assumption or, in some cases, firsthand knowledge that most members of a non-LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related Facebook groups will be unable to offer genuine support or actionable advice to them at any particular stage in their trying-to-conceive or pregnancy journeys, especially when experiencing losses. Other times because participants felt othered in one way or another, or were concerned about experiencing harm or explaining themselves.

Pervasive heteronormativity, cisnormativity, and lack of understanding. Participants mentioned a perception of heteronormative culture inherent in these non-LGBTQ-specific groups; the perception that most members in those groups are not LGBTQ-identifying and so do not have to consider the healthcare, logistical, financial, social, and personal obstacles LGBTQ people face while trying to conceive, during pregnancy, and when experiencing a pregnancy loss. Even when non-LGBTQ members experience similar obstacles while trying to conceive and during pregnancy, they still benefit from a certain level of privilege afforded by their gender identity and/or sexuality. Participants described how this level of privilege in this type of non-LGBTQ-specific group felt intimidating and/or exhausting, and the gap between non-LGBTQ members (and their experiences) and participants felt almost impossible to bridge. This perception precludes productive, mutually-beneficial exchanges within these groups and between LGBTQ and non-LGBTQ individuals. As P13 mentioned:

"I'm never quite myself with straight people. They don't have to be queer to tell me ...their experience with miscarriage, but for me to be totally myself and totally connect, it helps when people are queer."

Here we see how interconnected and intertwined the experiences of loss and queerness are. The heteronormative culture that permeates this type of non-LGBTQ-specific group caused some participants to feel as if the experiences of other members (i.e., non-LGBTQ persons coping with a loss) are not similar to or true to their own experiences.

As another example, P12 (White, German/English/Irish, cisgender femme woman, queer/lesbian, married, 75K+) shared thoughts on the gap in understanding between LGBTQ and non-LGBTQ people going through the conception, pregnancy, and loss process:

"I think there is something like very particular to conception and birth, and pregnancy, in terms of the experience of being queer through that process. I think straight people just can't wrap their head around what it often takes for queer people to create families."

On a related note, P14 explained how this chasm can feel frustrating for LGBTQ people when they are trying to get support: *"I didn't wanna have to read other people's experiences that deal with more levels of privilege around their sexuality, when I'm trying to gain support or seek support for myself."*

Perceptions of pervasive heteronormativity in these spaces meant that participants did not feel they could be themselves and vulnerable in sharing their experiences with loss while being LGBTQ. They also did not feel that they could deeply engage with others who were privileged along axis of sexuality nor did they feel they could provide support to them in a meaningful way.

Participants noted how in addition to the experienced prevalent heteronormativity in non-LGBTQ-specific pregnancy and loss-related online spaces, they felt othered, particularly those who were racial minorities in those spaces. As P1 said:

"And those had become some of my supports that I also was feeling very othered. I don't identify as a heterosexual person, I actually identify as a bisexual person and at the time my spouse was identifying as a woman and my spouse is now trans. So just like kind of going to some of these, the in-person groups and even being online and just seeing that it was very like cis-het groups, very cis-gender, heterosexual groups, everybody's talking about mommy and daddy, everybody's talking about that kind of thing. And in addition to that, also feeling very

othered 'cause we were like the only black people in any of these groups most of the time … It just felt very uncomfortable, the language that they were using."

This is an important point because even though the overarching pregnancy loss experience was common for people in this group, this participant felt othered, not just because of being LGBTQ, not just because of their partner's gender identity, and not just because of being a Black person, but due to intersections of these identities *and* that of pregnancy loss. Earlier we described how LGBTQ-specific spaces also suffered from lack of representation around aspects of identity such as race and partnership. This example complements and complicates the point we made earlier, demonstrating the additional burdens a person of color carries through not only experiencing marginalization in non-LGBTQ specific spaces, but also in LGBTQ-specific spaces, which presumably are expected to be safe and supportive spaces.

Explanation and education labor and the potential for experiencing harm. This pervasive heteronormativity also meant that participants presumed the emotional labor of explaining themselves and educating others in non-LGBTQ-specific pregnancy and loss-related online spaces. For instance, P14 touched on some of the ways an LGBTQ individual might not be "seen" in a non-LGBTQ-specific group:

"*[T]here's an ignorance of that journey. I mean, it's not their fault, obviously. It's not their experience, so why would they have to think about that? That's why it felt like I didn't [want to] have to explain myself in this group and then have to explain the different barriers that we deal with, with people that don't get that experience.*"

For LGBTQ people to feel understood and potentially benefit from participation in non-LGBTQ online groups around conception, pregnancy, and loss, it would require a significant amount of emotional labor in the form of explanation of and education about their own experiences, including pregnancy-related interventions or loss experiences while LGBTQ. This labor that would be required for meaningful participation, especially when there are alternative (i.e., LGBTQ-specific) groups, did not seem worth it to many participants.

Further, even if participants were willing to put forth this emotional labor, some were not sure that it would be worthwhile—that they would be met with understanding and acceptance. As P13 explained, "*It's not so much that I don't feel like I can connect with them, I don't feel like they can connect with me if they're so different to me and their way is the dominant way,*" pointing to deep feelings of marginalization due to being LGBTQ and how that intersects with expectations and experiences of desired pregnancies and loss. P13 continued:

"*... I have spent lots of time with straight people and married couples and people who think a bottle cover has a boy color and a girl color, because that's literally a thing I was looking at today. I don't know that they can actually understand me, that I'm choosing to become a solo parent and that I'm queer, but I'm not actually dating anybody. ... Sometimes people don't even realize that I'm queer because they don't see past, 'Oh, she's wearing girly clothes.'*"

P13 was troubled by how much effort it can take to face the assumptions that members of non-LGBTQ-specific groups might make about their gender, sexuality, and partnership status. They continued, discussing feeling complicated about being invisible, but adding how revealing their LGBTQ identity in a non-LGBTQ-specific group could elicit hostile reactions. They concluded that it may be best to stay cautious:

"*...It feels like they can't see me, so I can't really get support from that. I can, but it's not worth it if there's a place to get support without having to go through the, 'Here, get to know me. Maybe you're really religious and really disapprove of me. Maybe you're going to tell me that in this group.' There's some presumption that these people are going to be okay with who I am in these [LGBTQ-specific] groups that isn't in the other [non-LGBTQ-specific] groups.*"

In this example we see how P13 did not feel safe enough to be visible as their whole self and participate in non-LGBTQ conception, pregnancy, and loss spaces due to anticipating a lack of understanding around the complexities of their intersecting identities: being LGBTQ, single, non-religious, and having experienced a loss and wanting to become pregnant again. This conception was formed both by online observations and other lived experience they had in their daily life.

The perceived pervasive heteronormativity in non-LGBTQ-specific online spaces also led to concerns about experiencing harm. In other words, some participants deliberately avoided these spaces due to fear—whether realized or presumed—that participants would be susceptible to judgment through homophobia, transphobia, or heterosexism in non-LGBTQ-specific groups. Further, some mentioned that they had to (or felt they would have to) constantly defend themselves, their partners, and/or their interventions or choices against the realized or presumed homophobia, transphobia, or heterosexism in non-LGBTQ-specific spaces. For instance, P9 said:

"*I just was not interested in having to deal with homophobia or even just having to explain myself and having to explain what my process had been like or what I had been doing in that space when really, what I would have needed out of that space was support and community.*"

P9 expressed not wanting negative, unsupportive, or harmful reactions which is what they anticipated. P9's account illustrates how, in a non-LGBTQ-specific conception, pregnancy, and loss group, they expect there to always be a chance for experiencing harm. Participants were not interested in others questioning them—they would instead rather receive the support they needed, which they were more likely to find in LGBTQ-specific spaces.

Feeling detached from non-LGBTQ individuals' pregnancy and loss experiences. Some participants expressed the potential of feeling like they had joined a broad-brush group that did not recognize their specific, unique identities if they had joined a related non-LGBTQ-specific online space. As P9 put it:

"*I mean, I think if I were to have gone into a more generic, just about pregnancy or just about getting pregnant or just about loss, I would have expected those spaces to be dominated predominantly by heterosexual people. I think I would have felt because of my own identity a little bit more detached from that. I think I would have felt anonymous not in the sense that nobody would know who I am or nobody would … I mean it's my real name. It's a picture of me. I recognize that that's identifiable information that someone could find out. But anonymous more so in the sense of I have no strings attached to these people.*"

This perceived lack of recognition in part due to the lack of a shared LGBTQ identity caused participants to feel alienated from or less interested in being involved in non-LGBTQ groups. While perceptions of separation and anonymity can facilitate sharing sensitive information and social support exchange overall [11], in this case we see that even though the loss experienced was shared, in the lack of a shared LGBTQ identity background, perceptions of anonymity (due to not feeling as though one is part of a community, not identifiability -- the pervasive conceptualization of anonymity) did not work to facilitate this participants' engagement in this group. In fact, they wanted to feel like they connected over both loss and being LGBTQ with other group members to be able to truly feel attached and participate; it wasn't the perception of anonymity as being identified per se, but the lack of attachment and lack of connectedness that mattered in this lack of interest in engaging with non-LGBTQ conception, pregnancy and loss groups.

In summary, not many participants reported membership in non-LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related Facebook groups. Those who did join non-LGBTQ-specific groups mentioned a lack of LGBTQ inclusivity and other representation in these spaces. As participants highlighted, this lack of inclusivity and visibility manifests as a fear of sexual and anti-trans stigma, pervasive heteronormativity, or simply a sense that a non-LGBTQ individual would not understand what an LGBTQ individual might be going through during the TTC, pregnancy, or pregnancy loss experience. Because of the social barriers, perceived or real, between LGBTQ and non-

LGBTQ individuals (e.g. fear of stigma and discrimination, lack of mutual understanding, assumptions), participation from LGBTQ individuals in non-LGBTQ-specific groups was limited compared to LGBTQ-specific groups. While the benefits and challenges of non-LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related online groups were often shared across participants, the benefits and challenges of LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related online groups varied based on dimensions of experiential similarity (e.g., the loss grief stage one was in and whether connecting to others would be helpful) and identity (e.g., race, partnership status).

5 DISCUSSION

This work extends scholarship at the juncture of intersectionality and HCI (e.g., [23,53,86,139,144,146,165]) by taking pregnancy loss and LGBTQ identity as a starting point of intersection and showing how the theory allows us to see that while online support spaces are frequently celebrated for providing much needed support and community, they do not serve this role for all equitably. We argue that it is key to recognize when online support spaces fail, how those who are let down practice resilience, and how we might design them to better support all, especially those at the margins. In this study, through in-depth interviews with LGBTQ individuals who experienced pregnancy loss and taking an intracategorical intersectional approach with consideration of multidimensional resilience, we make the following contributions.

> 1. We extend the existing and growing conversations around intersectionality in HCI, and apply the theory to shed light on LGBTQ people's experiences with pregnancy loss. We identify benefits and challenges experienced by LGBTQ persons who have experienced pregnancy loss in two broad types of online spaces: LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related and non-LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related online spaces. We show how LGBTQ individuals enact resilience by accessing or creating online spaces to meet their unique needs in relation to the TTC, pregnancy and loss and LGBTQ identity as a starting point, sometimes other identities (e.g., race), and intersections thereof. Later in this discussion, we conceptualize experiences of exclusion by participants in these online spaces as symbolic annihilation [7,153] and intersectional invisibility [121].

> 2. We offer ways forward in clinical and design directions that better allow finding support and community when considering multiple stigmatized and/or marginalized identities. We provide design implications related to a) easing intracommunity tensions and inequities; b) promoting resilience through facilitating the creation and sustaining of nested identity-based spaces on an intersectional level; and c) promoting inclusion of LGBTQ people in non-LGBTQ online spaces.

5.1 Practicing resilience: Exchanging knowledge and building solidarity online

Many participants felt excluded from non-LGBTQ-specific online groups about TTC, pregnancy, and pregnancy loss. Many reported feeling apprehensive about participating in non-LGBTQ-specific pregnancy loss groups online for a number of reasons. Almost all of their reasons had to do with avoiding harms and assumptions a non-LGBTQ individual or community could knowingly or unknowingly cause or make. Participants' reasons for generally avoiding non-LGBTQ-specific pregnancy loss groups online suggests that the harms and limitations LGBTQ individuals face in the physical world [78] can be reproduced in online contexts and limit access to social support.

Where resources for LGBTQ support in the physical world may be limited for a number of reasons (e.g. geography, discrimination, pervasive heteronormativity) [38], some online spaces, particularly Facebook groups meant for LGBTQ individuals at various stages of their pregnancy experiences, were places that LGBTQ individuals were able to find support to cope with their loss experiences. Consistent with prior literature (e.g., [50]), our findings suggest that strengths of LGBTQ community members should be considered at individual, interpersonal, and collective/community levels. Furthermore, these individuals knew that the support and advice from other group members was oftentimes coming from a place of personal experience or understanding, considering their shared experiences *and* identities – in this case starting from the nexus of LGBTQ status and pregnancy loss. These actions constituted both individual and collective resilience, resulting in real positive consequences. As a result of this support, participants felt less alone; they were able to give and receive help in a mutually-beneficial environment where there was a shared understanding of what they were going through—a stark contrast to how some were treated in face-to-face healthcare and institutional contexts [87] or how they anticipated engaging with non-LGBTQ-specific pregnancy and loss-related spaces would be like.

While it is not always the case that discrimination and inclusion in physical healthcare contexts and non-LGBTQ-specific online spaces are what drove participants to seek out and join LGBTQ-specific online spaces, especially Facebook groups, it is clear that these groups have, for some, filled empathy and information gaps resulting from physical healthcare and non-LGBTQ-specific online contexts. When faced with uncertainty about reproductive technologies for a pregnancy that later on led to a loss or after a loss, the LGBTQ-specific Facebook group for people trying to conceive includes people who have gone through the same experience and can offer first-hand, informed advice. When an LGTBQ person has experienced a pregnancy loss and finds that their other online spaces (e.g., individual social media profiles and timelines, non-LGBTQ-specific pregnancy-related Facebook groups) are unable to offer empathetic support that recognizes the additional healthcare, financial, logistical, social, and personal challenges associated with their loss [87], they can find solace in LGBTQ-specific Facebook groups from peers who know do not need explanation or education and just understand.

5.2 Finding space, making space, mitigating tensions

Many participants in our study reported being a part of LGBTQ-specific online groups as a positive experience. Most accounts of positivity in these groups were characterized by a default understanding from group members, a place to give and receive information related to LGBTQ experiences with pregnancy and pregnancy loss, and a place to feel less alone throughout the challenges an LGBTQ person faces when trying to conceive, when pregnant, or when experiencing a pregnancy loss. That said, we described and will further discuss later, even these online spaces that facilitated finding support and solidarity were not inclusive of all LGBTQ people such as Black members or non-partnered individuals experiencing losses.

5.2.1 Finding support for multiple stigmatized identities, but *not* always: symbolic annihilation and intersectional invisibility

Participants shared that membership in LGTBQ-specific groups related to pregnancy and pregnancy loss provided support and validation that is difficult to find in physical spaces or in more broad, non-LGBTQ- TTC-, pregnancy-, and pregnancy loss-related Facebook groups. Research has shown the importance of online spaces that represent intersecting identities, noting how they can be a place to manage stigma and express collective resilience through building community [119]. As a reminder, LGBTQ individuals who have experienced pregnancy loss face the stigma of their LGBTQ identity as well as the stigma of pregnancy loss; combined, these stigmatized identities and experiences represent higher degrees or more instances of discrimination and exclusion than they would individually otherwise. As Miller [119] points out, online spaces that account for intersectional identities are particularly empowering and validating for people with overlapping stigmatized identities. We show how online groups for LGBTQ individuals experiencing pregnancy loss afforded participants a place to congregate and share experiences in ways unavailable otherwise (e.g., in-person, with non-LGBTQ individuals). This sharing and exchange of ideas and sympathy between members supports community-building and relationships that may not have existed if these spaces were not available to LGBTQ individuals.

While LGBTQ-specific online spaces were largely reported to be helpful for LGBTQ individuals experiencing pregnancy loss, some participants reported important deficiencies within these groups. Some of these deficiencies were described as a lack of representation of

identities beyond those relating to being LGBTQ and experiencing pregnancy loss, others had to do with intergroup tensions as a result of a group's assumptions of members' experiences.

Pregnant individuals or those trying to conceive turn to topic-based online support groups, forums, and tracking apps to manage pregnancies, cope, and exchange social support [4,103,104]. Research indicates that pregnancy and fertility tracking apps are notoriously geared towards heterosexual, cisgender people [140,151:20], and ignore pregnancy loss through what has been theorized as symbolic annihilation through design causing representational harm [7]. That is, these apps perpetuate a normative and linear pregnancy experience and further stigmatize and marginalize outcomes such as pregnancy loss, by not accounting for it in any meaningful way [7]. A relevant concept to symbolic annihilation that specifically recognizes intersectional marginalization is intersectional invisibility, which renders individuals who experience several forms of marginalization invisible [121].

While our analysis did not focus on tracking apps, it is important to note the aforementioned context as the socio-technical backdrop of what resources LGBTQ people who experience losses have to draw from for support and coping to begin with. With the limitations posed by these apps, topic and identity-based online groups and forums could potentially meet some aspects of what LGBTQ persons who have experienced losses need. Prior work about LGBTQ-specific online communities touches on some of the ways tensions manifest within LGBTQ communities, where individuals with more dominant or vocal identities can cause members of other subgroups to feel alienated, criticized, or generally harmed [158]. As such, certain LGBTQ identities may not benefit from LGBTQ-specific spaces in the same way others do [158], which the participants in our study corroborate. However, [158] mainly focuses on subgroups within the LGBTQ community, rather than considering other aspects of identity beyond gender and sexuality. We argue that understanding the nuances and imbalanced power dynamics within LGBTQ spaces while also considering other identity aspects offers insight for designing interventions that might mitigate some of these imbalances.

Our research builds on some of the ways that LGBTQ individuals experience harm or lack of representation within and beyond LGBTQ-specific online contexts, and how individuals experiencing pregnancy loss are also harmed by lack of consideration of loss as a pregnancy outcome in online spaces. We highlight how some individuals prefer different or deeper degrees of representation than others. For example, a participant in our study reported a desire for pregnancy loss groups with more representation of Black people, highlighting the fact that some people may wish more strongly for aspects of their identities to be represented. Further, LGBTQ-specific groups containing dominant narratives—for example, in our study, participants reported how members of LGBTQ-specific online groups about pregnancy loss assumed that all group members were partnered—can leave users that do not fit neatly into those narratives feeling excluded. We see that perceptions of symbolic annihilation, previously reported in pregnancy tracking apps [7], and intersectional invisibility [121] persisted for both non-LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related and LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related online spaces. In LGBTQ-specific spaces such annihilation and intersectional invisibility was experienced along axis of race, class, or partnership status in these data. In non-LGBTQ-specific spaces this annihilation and intersectional invisibility was experienced along axis of LGBTQ pregnancy and loss in tandem, shaped by pervasive heteronormativity, cisnormativity, and lack of understanding from non-LGBTQ people.

5.2.2 Intersectional supportive networks as a starting point for more granular and meaningful identity representation

In response to the noted symbolic annihilation through design [7] and intersectional invisibility [121], some participants reported discovering or creating groups that more specifically and fully represented their other identities (e.g., race/ethnicity) than LGBTQ pregnancy loss groups with a broader scope. Indeed, individuals may draw upon intersectionality as a source of strength and resilience [121]. In this sense, LGBTQ individuals expressed collective resilience, combatting some of the challenges they faced, by creating online spaces representative of their various identities in order to facilitate coping and supportive networks and spaces. This strategy is noteworthy for a few reasons. First, the desire to create a pregnancy loss-focused group based on race or ethnicity within an LGBTQ pregnancy loss community, as one participant did, indicates how deeply intersectional representation might need to go for someone to feel supported or validated, or to even feel comfortable enough to take the first step of seeking that support in online spaces, even when other aspects of their identity are represented (i.e., LGBTQ and loss experience). While a sense of "shared identity" is a defining factor for the success of many online communities including those related to loss broadly (when not taking into account the intersectionality of people's identities) [35], here we see that even having both experienced pregnancy loss and being LGBTQ-identifying as shared aspects of one's identity were not enough for some to find associated online communities safe, trustworthy, and useful to them. Research has studied the unique tendency of LGBTQ communities to create more representative subgroups through an "iterative community-building function," in an effort to create visibility in online spaces where it might be lacking [71]. The iterative community-building function of LGBTQ communities is characterized by LGBTQ individuals taking initiative to form subgroups within these communities more specific to the identities they may feel are lacking representation, but that are needed. In contrast to participants in [71] who were more interested in increased visibility, participants in our study were more concerned about creating new support spaces in which they could feel safe enough to seek support, or connected enough to provide support. We see that increased and compounding representation of identity specificity raises the likelihood that an LGBTQ individual will feel more strongly represented and supported.

We see how this added representation based on intersecting stigmatized or otherwise marginalized identities is important because these subgroups may provide support for more salient identity factors than LGBTQ pregnancy loss groups offer. In other words, someone who is a person of color and identifies as LGBTQ may only feel partially supported or validated in a space that is LGBTQ-specific but not race-specific. This suggests that for support to feel the most meaningful, it needs to come from individuals whose identities represent what the person in search of support most strongly identifies with. Moreso, the person in search of support may need representation and support about numerous identities. Research shows that community support can bolster the wellbeing of individuals who face intersecting stigmas [154].

In this sense, community-building inclinations among LGBTQ individuals who experience pregnancy loss may reduce the difficulties faced due to their overlapping stigmatized or otherwise historically stigmatized identities.

5.2.3 Lurking as a helpful strategy to access information, but not helpful for emotional aspects of coping

Participants reported "lurking" in various different online spaces, some LGBTQ-specific, but mostly non-LGBTQ specific. Lurking is known as behavior that results in passive retrieval of information online. Historically, lurking has often been frowned upon in online communities as it is associated with freeloading and non-reciprocation [125]. However, some research attempts to shift the rhetoric of lurking, likening it to that of "listening" [39], working to convert the perception of the behavior to one that is more engaged than previously given credit. In our study, the participants did not have to actively participate to benefit from these groups. Here, lurking was a way for an LGBTQ individual to safely gather information from a group of people without making personal disclosures that they did not feel comfortable with. This way, they avoided rendering themselves vulnerable to potential harms.

Yet, we suggest that while informational aspects of finding support can be accomplished through lurking, the emotional aspects may be less powerful. The number of participants in our study who joined non-LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related Facebook groups were low. However, those who were part of these groups were able to find information primarily by what is commonly referred to as "lurking". Being observers kept participants protected, but some participants felt their limitations of engagement to be restrictive. Lurking allowed participants to keep some of their identity facets private to limit assumptions and avoid potentially negative interactions, while also benefiting from the ability to passively participate in the group's sharing of information.

5.3 Design and Clinical Implications

We provide insights about what directions future design work could explore. These include how designs could help ease intracommunity tensions and inequities, how we may design for finding community and solidarity at an intersectional level, and how non-LGBTQ-specific online spaces may be more inclusive and helpful to LGBTQ individuals in their pregnancy and loss experiences.

5.3.1 Finding common ground to ease intracommunity tensions or inequities

Our findings suggest that designs that facilitate reaching common grounds among LGBTQ people navigating pregnancy and loss would help ease intracommunity stigma and inequities that some participants pointed to. Prior research has found that reaching commonality through a shared identity can reduce intra-group stigma [66], which is a result of imbalanced power dynamics within, in this case, stigmatized subgroups. For example, people within a stigmatized group, may find commonality on the basis of an identity facet like motherhood or wanting to make positive life changes. This understanding can create space to reduce perceptions of stigma. Intra-group stigmas did not appear as polarizing in our research as has elsewhere [66], but participants in our study nonetheless reported tensions surrounding the experiences of seeking single parenthood or being a Black person within LGBTQ-specific online pregnancy loss groups; that said, we speculate that there would be more evidence for such intra-group stigma with more diverse participants.

With intra-group stigma reduction strategies in mind, such as improving ways for differently stigmatized people to reach common ground, designers can use this research to consider the ways that social media technologies can be built to balance intracommunity dynamics. For example, designs can surface or signal shared identities that would likely facilitate developing common grounds. Exactly what identity facets would be more important to people in feeling like they have enough of that common ground should be decided in working with relevant communities and future work. It is important to note that any designs that would signal aspects of identity to others can also be harmful. For example, there is a potential for undesired audiences to learn about a concealable aspect of one's identity that is indeed important to them for meaningful connection and support exchange. Yet, we argue that this challenge does not negate the potential of exploring such an approach that would protect the safety and privacy of those it is aiming to help, but emphasize that any such approach should take great care to ensure such protection.

5.3.2 Promoting resilience through facilitating the creation and sustaining of nested identity-based spaces on an intersectional level

Wong-villacres et al. [165] suggest that intersectionality can be used to examine processes, rather than "users". They describe how with interacting with others people may resist or enact power, and suggest designing for processes. While identity traits are important to the intersectional approach, Wong-villacres et al. suggest that they can provide a limited view only towards marginalization [33,136,166], but by understanding individuals' interactions and processes, we can begin to see where change may be possible and how [165]. Building on this approach, in this study we have investigated participation and support processes for LGBTQ people who have experienced pregnancy losses in the context of two broad types of online spaces that surfaced as relevant to them. In doing so, we attend to both identities (e.g., LGBTQ, pregnancy loss) and relevant processes they engage with in relation to those identities (e.g., resilience through creating new groups, exchanging support, lurking).

We saw how some participants enacted forms of power and resilience in response to the oppression they experienced in some online spaces – we ask how might social computing system design support these resilience-enabling processes? This approach, aligned with the HCI resilience literature (e.g., [47,157]) allows us to move away from need-based approaches to research with and for marginalized people; need-based approaches have been subject to critiques as they ignore the strength of the communities they aim to help [110]. Our approach, building on this prior work [47,157,165] on the other hand allows us to understand existing processes, as noted above, to then consider augmenting and supporting through design.

Our findings point to the need for social media technology designers to consider the users' support exchange and coping processes on an intersectional level. This could take the shape of threads, offshoots, or subgroups that exist within larger LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related Facebook groups. To preserve the wide range of experiences and support an LGBTQ-specific TTC-, pregnancy-, and pregnancy loss-related Facebook group could offer, individuals who are seeking more granularity of representation (whether by race, partnership, location, disability, and so on) could start these specific threads, offshoots, or subgroups *within* existing larger groups. A simple representation would be similar to channels within a larger Discord server. This way, these spaces provide greater access to validation and support for LGBTQ individuals with intersectional identities, for instance, while allowing them to benefit from the volume and range of first-hand experience and knowledge that a broad-based group contains. This approach seems promising due to the difficulties participants experienced as a result of being caught between two spaces, one that is not specific to intersections of their identities and experiences, and one that is too small to sustain and lacks other desired content that a larger group can provide around still useful but are not necessarily related to multiple aspects of one's identity and experience. Exactly what form these will take should be decided in collaboration with the people any such designs are aimed to support, however, we provide examples of what this could look like next. All in all, this approach to designing online spaces would help combat symbolic annihilation and intersectional invisibility experienced by participants in both LGBTQ and non-LGBTQ spaces, one that we advocate for in this work.

One can imagine a larger group centered around LGBTQ people and TTC-, pregnancy-, and pregnancy loss. Within that group, designs can facilitate the processes participants in our study already innovated around organically; for example, there could be groups based on the specific stage in which members are, partnership status, race, gender, sexuality, and any combination of these identity aspects that may be important to some members in the larger group. Indeed, a similar approach was used in [8] to connect people in need of support one-on-one. Of course, one challenge for members would be to find these nested groups. To facilitate that, members could choose to share with the system certain aspects of their identities upon which they would like to connect with others (these need not be visible to other member), and would have the option to join spaces that match those criteria, that is, spaces with members who have also noted their desire to connect with others along the same identity intersections. Another challenge, as noted by participants who created similar spaces is moderating them; while important, discussions of how online spaces should be moderated is outside the scope of this article. However, we note that any such moderation would also likely benefit from community input.

Designing for resilience and social support exchange (as a pathway to resilience) that reflects diverse aspects of people's identities has the potential to impact many marginalized groups positively, beyond those who participated in this study. For example, while a Black, queer, woman with a mental health condition may find online spaces about mental health broadly helpful, they may also desire to connect with others who have very similar experiences and identities as they do. As another example, while individuals diagnosed with Covid-19 may want to learn about the illness more broadly, they may also want to connect with others with whom they share other identity aspects (e.g., gender, roles, race, class, other health conditions), akin to participants in our study who desired niche online spaces specific to their most salient identity facets in the context of pregnancy, conception, and loss. It remains to be explored what configurations of identity and experiential (dis)similarity would be beneficial for whom and in what contexts – an area for future work.

5.3.3 Making non-LGBTQ-specific online spaces more inclusive of LGBTQ individuals

While LGBTQ-specific online spaces are important resources for the LGBTQ community, there are advantages to actively ensuring specific non-LGBTQ-specific spaces are inclusive to and of LGBTQ individuals; that is, that they do not target LGBTQ individuals via symbolic annihilation [7,10]. However, these efforts may prove futile if applied to groups that LGBTQ individuals would have no interest or use in

joining. That is, some LGBTQ participants indicated that they avoided joining non-LGBTQ-specific groups related to any particular stage in their pregnancy experiences. They attributed this avoidance to a sense of pervasive heteronormativity, a general lack of understanding on behalf of other members, and a need for explanation and education labor if they would choose to actively participate in the groups. That is, while participants may have been able to glean some useful information in these non-LGBTQ-specific groups, they were essentially more labor than they were worth to them. Exploring what these groups might be, or what forms such inclusion may take is an area worth exploring with LGBTQ individuals and allies in future work. This is important not only because it may broaden the scope of the information that LGBTQ individuals might get, but also because it has the potential to reduce barriers to participation and togetherness with more informed non-LGBTQ people involved.

That said, we suggest that efforts taken to ensure that groups LGBTQ individuals may find actual, worthwhile value in, especially those that represent other facets of their identities, are those that may be more beneficial. Ensuring this type of inclusivity could expand the quantity and quality of information and support an LGBTQ individual could receive, especially in relation to their conception, pregnancy, or pregnancy loss. LGBTQ individuals might feel more comfortable and open in a group where their perception of assumptions and hostile behaviors on behalf of other, cisgender and heterosexual members is lower or better mitigated. Fostering a more inclusive non-LGBTQ environment would benefit non-LGBTQ individuals as well, expanding the quality and quantity of resources that non-LGBTQ people would have access to. For example, we described how one participant discussed how they created their own online space: not explicitly for LGBTQ individuals, but for Black people who have experienced pregnancy loss. While this group encompasses two of this person's important identity facets, it was not intended only for LGBTQ individuals, though it was explicitly inclusive of them and included LGBTQ members. In this way, such groups allowed people to find great value from their participation and moderation, as did other members: their identities were respected and understood, their emotions supported and validated, and their questions and calls for advice were answered appropriately.

More generally, equitable non-LGBTQ spaces could contribute to a generally more understanding and compassionate online ethos, paving the way for reducing stigma and respecting personal differences. One approach to equitable non-LGBTQ-specific spaces could be having volunteer moderators who identify as LGBTQ or are allies and can facilitate discussions, as well as offering guidance and tips to educate non-LGBTQ moderators and raise awareness of LGBTQ concerns. This approach, while potentially powerful due to formal representation, can also problematically put the labor on LGBTQ individuals to monitor and educate other members of the group. Walker and DeVito propose a similar paradigm [158], where educator-moderators have incentive to represent stigmatized individuals within a group. Here, we take this paradigm a step further by proposing to move beyond LGBTQ-specific spaces. These educator-moderators could work as a conflict resolution and prevention team to reduce the harms or exclusion a stigmatized individual might have to go through by advocating for themselves or leaving a group. Perhaps more importantly, they can contribute to making originally non-LGBTQ-specific spaces more explicitly equitable and inclusive of LGBTQ people; for instance, community guidelines and stated norms can counter the otherwise normative assumptions many pregnancy, conception, and loss groups implicitly or explicitly entail (e.g., that members are heterosexual and cisgender). They can also ensure their language and imagery are inclusive of LGBTQ people, and thus combat intersectional invisibility [121] and symbolic annihilation [7] with seemingly small steps. While there is potential for good in ensuring LGBTQ people feel welcome and included in these spaces, there is also potential for harm, mainly around harmful behavior targeted at LGBTQ members, and determining how to combat and prevent harm is an area for further exploration (and outside the scope of this analysis). That said, that there might be harm, does not negate the promise of more inclusive online spaces, but is indicative of the complexity of what changes may be appropriate.

5.3.4. Clinical implications

Our formative analysis [87] of the data used for the present analysis shows that many participants reported negative or challenging experiences in healthcare contexts that had to do with being LGBTQ. Participants shared experiences of discrimination, microaggressions, and exclusion within institutional contexts relating to their pregnancy experiences, particularly during the process of trying to conceive in both physical healthcare contexts, and as we uncovered in the present study in some non-LGBTQ-specific online spaces. This indicates that there is much work to be done creating more equitable and inclusive environments for LGBTQ people within reproductive healthcare contexts, and especially pregnancy loss. Indeed, the psychological impact of pregnancy loss is often overlooked by health care providers because pregnancy loss is so common and its management is often medically straightforward. However, data suggests that over 90% of pregnant people desire specific support from their providers, and only 30% report receiving such support from their health care providers [102]. Understanding the challenges faced by LGBTQ people when facing pregnancy loss is an important first step for health care providers. This analysis provides insights into some of the online spaces LGBTQ people draw from in the conception, pregnancy, and loss process. We suggest that providers should be consistently proactive in seeking out and recommending available in person and online resources for LGBTQ people to support their need to discuss their loss, ongoing psychological distress, and potential plans for future pregnancies with special attention to the unique challenges and benefits that such resources would pose for those who may experience additional representational harm [7], symbolic annihilation [7], and intersectional invisibility [121].

6 CONCLUSION

Reproductive health and its stigmatizing and marginalizing complications such as pregnancy loss can be particularly challenging for LGBTQ people. While coping and access to support and community is crucial in healing after a loss, finding it is in no way trivial or granted. Online spaces have the potential to facilitate healing through making possible finding otherwise hard to find similar others or information. Informed by intersectionality as our guiding framework, in this paper we examined the unique challenges LGBTQ people face and the roles that online spaces play in their navigation of loss and pregnancies leading to losses. We conducted an in-depth phenomenological interview study with LGBTQ people who had recently experienced pregnancy losses (*N*=17).

We illustrate how LGBTQ individuals who experienced pregnancy losses practice resilience and use or cultivate online spaces to meet their needs in relation to the pregnancy and loss experience, LGBTQ identity, other identities, and intersections thereof. We discuss the benefits and challenges that they perceive in online pregnancy and loss-related spaces, both those that were specific to LGBTQ people and those that were not. While some were able to find support, knowledge, and solidarity, others (specifically individuals with multiple stigmatized identities, such as Black or non-partnered individuals) had difficulty doing so even within LGBTQ-specific spaces, showing how experiences of privilege (e.g., Whiteness) and oppression (Blackness) shaped how participants were able to receive support for pregnancy loss. We conceptualize experiences of oppression or exclusion in online spaces deemed to be supportive as forms of intersectional invisibility and symbolic annihilation. We discuss findings' implications for designs that would facilitate finding common ground to reduce intracommunity inequities, the creation and sustaining of nested identity-based spaces on an intersectional level, and designing non-LGBTQ online spaces that are more inclusive of and helpful to LGBTQ people. We advocate that research, design, and practice should further engage with the complexity and diversity of marginalized individuals' experiences in reproductive health settings, especially those that carry stigma such as pregnancy loss.

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