Similar Others, Social Comparison, and Social Support in Online Support Groups

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Social comparison and social support have implications for individuals' wellbeing, offline and on social media. Perceptions of similarity underlie both social comparison and social support processes, though how comparison and support function in tandem in online spaces, and which aspects of identity and experiential similarity are salient to which comparison and support outcomes, merits investigation. Through interviews with people who have joined or considered joining social media-based support groups following pregnancy loss (N=18), we provide an intracommunity view into social comparison within online support groups. We identify a set of *identity* and *experience* attributes that inform perceptions of similarity and difference in these support spaces. We characterize tensions arising from these attributes and propose the preliminary *Social Comparison and Social Support in Online Support Groups* model to describe interactions between social support and comparison processes *within* online support groups. We further discuss findings' implications for design, including via introducing the *tolerance principle* of online health support groups. CAUTION: This paper includes quotes about pregnancy loss.

CCS Concepts: • **Human-centered computing** → Collaborative and social computing → **Empirical studies in collaborative and social computing**

Additional Key Words and Phrases: Social comparison, social support, social media, similarity, pregnancy loss

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1 INTRODUCTION

"Comparison is the death of joy." Attributed to American author Mark Twain (1835–1910), this quote captures a longstanding and popular sentiment—that social comparison, the natural process of looking to others to think about or evaluate aspects of ourselves [32,97], leads to discontent and disappointment. Decades of scholarship on social comparison have explored the claim that

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social comparison may detract from individual well-being [35]; this trend also appears in work on social comparison and well-being in online spaces, such as social media [9,16,91]. More recently, however, scholarship has complicated the connection between comparison and negative impacts on well-being and argued that, under certain conditions, social comparison may contribute to improved well-being; this appears the case both online [64,99] and off [25,67]. Specifically, research on social comparison within online support groups reflects the dualistic nature of comparison consequences [11] and, given overlap between comparison and support processes, highlights the stakes of understanding the conditions that facilitate positive and negative affective outcomes of comparison that bear on well-being.

Similarity underlies both social comparison and online social support. Social comparison theory posits that we seek individuals similar to ourselves as comparison targets [24,32], and the ability to connect with others with similar experiences is a prominent motivation underlying participation in support groups, online and off [23,73,98]. Similar others, online and off, may provide support that significant others (e.g., romantic partners) cannot, including appraisal of one's circumstances and coping, validation and normalization of experience, and targeted information [85,86]. Beyond experiential similarity broadly, however, there appears a lack of clarity regarding which aspects of experience and identity are salient to perceptions of similarity. Research in offline contexts suggests that factors such as attitudes, personality, and values [24] may be relevant to perceived similarity in comparison; works exploring online contexts also note religious beliefs, age, and ethnicity as additionally salient to similarity in comparison [12,15]. However, further work is needed to clarify in which contexts and under what circumstances such factors are influential [86]. As social comparison can also result in negative affective consequences and detriment well-being, however, similarity in online support groups may contribute to maladaptive comparisons and interrupt receipt of social support from peers. Given the potential for social comparison in online spaces, examining how comparison manifests in online support groups, and which aspects of identity and experience inform perceptions of similarity, has significant implications for group members' well-being and online support groups' effectiveness—an investigation this study undertakes.

We investigate social comparison in the context of social media-based support groups for pregnancy loss. Pregnancy loss is a common but often stigmatized experience in the United States that is often psychologically stressful [45]; support from experientially similar others can be instrumental in managing and coping with loss [6,38]. Understanding how comparison manifests in social media-based support groups for pregnancy loss—and with what affective consequences—is an important contribution to both comparison and support literature.

Drawing on interviews with 18 U.S.-based individuals who joined or considered joining a social media-based support group following pregnancy loss, we provide an intracommunity view into social comparison within pregnancy loss support groups on social media. We present themes illustrative of social comparison directions and outcomes, highlighting identity and experience attributes that appeared relevant to participants' experiences with these support groups. Our findings reflect tensions related to "magnitude" of loss, "success" stories (i.e., those that relate positive pregnancy results or births), and the value of both similarity and difference in gaining social support. By identifying these tensions, we offer insights into how social comparison may both facilitate and interrupt gaining social support.

Based on our analysis, we introduce the *Social Comparison and Social Support in Online Support Groups Model*—a preliminary model to describe and formalize the relationships between social comparison and social support outcomes in online support groups. Within this model, we identify a set of *identity* and *experience* attributes that inform perceptions of similarity that undergird social comparison. Identity attributes include race/ethnicity, age, values, relationship status, surfacing in our analysis, and gender and sexuality, surfaced in prior work related to online support seeking after pregnancy loss [7,72]. Experience attributes include the physical experience of pregnancy, health contexts, and pregnancy loss timing and history.

Additionally, we introduce the *tolerance principle* of online health support groups, describing the phenomenon of tolerating individual discomfort and potential negative affective consequences from exposure to undesired content due to the belief that others find it supportive or helpful. We suggest this principle as one to uphold in designing online support groups.

Finally, we argue that insight into perceived similarity and difference, and the consequences thereof, carries implications for designing online spaces to support people who have experienced pregnancy loss. We discuss the importance of designing for supportive experiences, rather than positive affective outcomes of comparison, and propose design considerations that may aid support by leveraging similarity and minimizing disruptions caused by comparison.

Computer-Supported and Cooperative Work (CSCW) scholarship has long been interested in online communities (e.g., [50,71]), including online support and social comparison, especially on social media [16,22,34,51,88]. In this paper, we wed these areas to provide a novel view into both comparison and support processes by considering how and, with regard to similarity, with which aspects of identity and experience these processes interact within online support groups.

A note on the recent overturning of Roe v. Wade in the U.S. In 1973, the U.S. Supreme Court's decision on *Roe v. Wade* determined that the U.S. constitution (under the Fourteenth Amendment) provides a fundamental right to privacy that protects a person's right to choose to have an abortion. This case changed the ways that states were allowed to regulate abortion and in effect protected access to abortion before a pregnancy was considered to be viable (under varying conditions and with varying restrictions, according to state) within the U.S. On June 24, 2022, the U.S. Supreme Court released a decision on *Dobbs v. Jackson Women's Health*, which effectively overturned Roe v. Wade by determining that the U.S. constitution does not confer a right to abortion. At the time of this submission in July 2022, seeking, performing, and undergoing abortion is illegal in some U.S. states, legal or protected in some states, and threatened or likely to be changed in others.

We conceived of and conducted this study before Roe was overturned. While this study's focus was not on abortion, pregnancy losses that we describe here and abortions are often medically indistinguishable [54]. More broadly, experts have raised concerns around what this new ruling means for reproductive care, including for people using assisted reproductive technologies, people with health conditions including and beyond those related to pregnancy, and people experiencing pregnancy losses of pregnancies they wish to keep [82,87]. Other concerns include the potential for law enforcement to use online trace data (e.g., mobile app data, search data) to criminalize those seeking and getting abortions [26,33].

At the time of this writing, as authors living in the U.S., we are still processing this ruling and its ramifications, both personally and professionally, including what this ruling means for research on reproductive health, such as ours. As we continue to learn, reflect, adjust, and resist, we nonetheless believe that understanding experiences of pregnancy loss remains important. Pregnancy losses will continue to happen, and perhaps, with the additional risks facing impacted individuals as a result of Roe's overturn, finding supportive spaces and others is even more pronounced yet challenging. Of course, in sharing this work's implications for design for pregnancy loss support, we emphasize that ensuring privacy and security is of utmost importance given the stakes involved.

2 RELATED WORK

Social comparison and social support share several similarities, including perceptions of similarity as a key component. We review social comparison and social support as they pertain to support groups on social media. We emphasize past work related to online support groups organized around health topics—pregnancy loss specifically—when possible. We then expand on similarity's role in both social comparison and social support processes. We highlight a lack of clarity in extant scholarship regarding which aspects of identity and experience contribute to perceptions of similarity, as well as how those aspects bear on social comparison generally.

2.1 Social Comparison

Social comparison refers to the process of using information about other people to think about or evaluate oneself [32,97]. Comparison is a natural process that may occur intentionally or unintentionally [17,97], and is associated with motivations including self-evaluation, self-enhancement, and self-improvement as well as need for common bond, altruism, and self-destruction [17,44]. Social comparison theory posits that individuals look to "similar others" as comparison targets [24,32], and that comparisons may focus on the target's abilities (e.g., "how we are doing relative to others"), opinions (e.g., "how we should behave, think, and feel"), or emotions (e.g., intensity, appropriateness) [32]; quotes [90]) in a given context.

Comparison targets may be construed as superior (e.g., better off) or inferior (e.g., worse off) to oneself, resulting in upward and downward comparisons, respectively. Lateral comparisons occur when an individual perceives a target as on equal footing with oneself [43]. Early theorizing, such as Wills' [96] downward comparison theory and Collins' [25] construal theory, posited that comparison directions were more strongly associated with contrasting outcomes, such that upward comparisons facilitated negative (e.g., lower self-evaluations, feelings of inferiority) affective outcomes and downward comparisons facilitated positive (e.g., facilitating self-enhancement, boosting self-esteem, reducing anxiety) affective outcomes [17].

A body of research has since challenged comparison's direction-outcome associations [17,35], rather pointing to assimilation and contrast as processes informing comparison's affective outcomes. Assimilation occurs when one's "self-evaluation moves *toward* the comparison standard" and contrast occurs when self-evaluation moves *away* from the standard [35:178] (emphasis added). Understood through assimilation and contrast, both upward and downward comparisons may result in positive or negative affective outcomes. As Buunk et al. [17] explain, "Learning that another is better off than yourself provides at least two pieces of information: (a) that you are not as well off as everyone and (b) that it is possible for you to be better than you are at present" (p. 1239). This example illustrates how upward comparison may facilitate both negative and positive affective outcomes. Downward comparisons may similarly reveal that one is better off than others (and likely result in positive affective outcomes) and that one can be worse off than at present (likely resulting in negative affective outcomes).

Scholarship additionally identifies factors that inform comparison processes, including outcomes. Intrinsic individual traits, such as self-esteem [16,57,88] and social comparison orientation (SCO; [36]), inform not only whether one is inclined to engage in comparison, but also with what likely outcome [22,95]. Factors such as mood [48] and whether the comparison target is known or a stranger [22] may also affect comparison. In selecting comparison targets, the motive for and circumstances of comparison appear influential. Taylor and Lobel [83], for instance, find that, among cancer patients, downward comparisons are associated with self-evaluation needs while upward comparisons appear associated with affiliation and information needs. In online spaces, contextual factors such as the time spent on social media [22,93], amount of content encountered [16], and nature of content on one's social feed [88,93], may also inform comparison processes. For example, in a survey of social media users across 18 countries, Burke et al. [16] found that individuals with more friends, who spent more time, and saw more content on Facebook had increased opportunities for social comparison, though experiences of comparison and related outcomes varied widely among respondents.

Indeed, recent work has reiterated that, because of individual and situational factors, it is difficult to predict which outcome is likely to result from comparison in a given situation. This work surfaces envy as a key concept [12,64] that may facilitate both negative and positive affective comparison outcomes; by extension, social comparison and feelings of envy may positively or negatively impact individual well-being. That is, in addition to negative affective outcomes, envy may constitute an "assimilative emotional reaction" in instances of upward comparison and result in feelings of inspiration, positively associated with well-being [64,65]. Inspiration as an outcome of comparison on social media is perhaps particularly significant in health contexts, in which comparison may be co-present with social support needs and in which negative well-being impacts may have cascading effects on health.

2.2 Social Comparison in Online Support Groups

Given the association between social comparison and well-being, established in research (e.g., [64,67,99]), it follows that social comparison may also facilitate coping, which has implications for well-being. A body of research explores social comparison within online support groups, highlighting similarity's role within both support and comparison processes.

Coping refers to the process of managing demands that "tax or exceed" one's personal resources [56:141], such as stressful health diagnoses. Social support (i.e., what people say and do to help one another [40]), may facilitate coping [24], and includes behaviors that are intended to provide emotional, informational, instrumental, network, and appraisal or esteem assistance [28,47]. Social comparison specifically is a mechanism for appraisal [47]; appraisal and esteem support are sometimes combined or used interchangeably to describe evaluative feedback about one's abilities and/or circumstances, such as reassurance that one can successfully manage (or is managing) the stressor at hand [28,47].

Online support groups facilitate social comparison and coping in part through connecting "similar others," or peers with a shared experience [43,94]. In these spaces, similar others become references who may aid group members in gauging their emotional reactions to stressors (and appropriateness thereof), assessments of the situation, and ability to cope, as well as provide informational and emotional support [15,78,85]. The contributions of *similar* others are often contrasted, in prior work, with the contributions of *significant* others (e.g., romantic partners, family members). Thoits [85,86] argues that similar others are more adept in aspects of emotional support, such as "indicating understanding of the experience," "representing role model, possible self, hope," and showing empathy, as well as offering informational support and advice, sharing their own experiences, and reframing situations, compared to significant others.

Given the centrality of shared experience, support groups may also facilitate lateral comparisons, in which the comparison target is perceived as equal (in ability, opinion, circumstance) with the comparer; such comparisons may normalize difficult experiences and challenge social isolation [43]. Broad experiential similarity—a common characteristic of many online support groups—however, may not lead to lateral comparison. For instance, as Taylor and colleagues suggest, breast cancer patients—despite having the shared experience of cancer—draw on *specific* dimensions of their experience, such as comparing a lumpectomy to a mastectomy, to inform downward comparison as a coping strategy (see [83] for review). Along similar lines, for people in hysterectomy online communities, additional aspects of similarity such as shared religion, ethnicity, and parental status inform perceived helpfulness of community members [15]. Separate from social support processes, similar attitudes and personalities [24], religious beliefs [15], and identity attributes like age [12] and ethnicity [15] may influence social comparison in both online and offline contexts.

In combination, prior work indicates that perceptions of similarity and difference are salient in both social support and social comparison processes, with the first often pertaining to general experiential similarity. However, research is needed to identify aspects of identity and experience that contribute to perceptions of similarity (and, by extension, difference) in relation to online social support and processes through which people develop these perceptions.

2.3 Study Context: Pregnancy Loss

Pregnancy loss, referring to any undesired loss of pregnancy, is a common event, occurring in at least an estimated one in four clinically recognized pregnancies in the United States [31,79]. Despite this incidence, people who experience pregnancy loss often face social and internalized stigma (e.g., self-blame), in addition to feelings of grief and loss [3,10,55,58,72]. Pregnancy loss and associated grief can be socially isolating [14,45,74]. While romantic partners and family are often important sources of informal social support, unsupportive comments from otherwise trusted others may contribute to feelings of loneliness and isolation [19,68]. Similarly, pregnancy and birth announcements from supportive others may exacerbate feelings of isolation and hurt [59,60,80]. Relational partners may also experience distress following pregnancy loss [14,53] and require support [20], which may interrupt their ability to support their partners. A lack of support from one's informal care network (e.g., family, friends) may detract from individual well-being [1]. Difficulty gaining effective support from these networks may inform seeking support from experientially-similar others [38].

Following a pregnancy loss, individuals may have numerous support needs, including emotional support from partners and family [13], challenging feelings of loneliness [38], information about loss and recovery [4,51], emotional and informational validation [6], and appraisal or feedback regarding how they are coping with loss [38]. The types of support required by an individual may vary according to their reaction to loss, which is influenced by myriad factors such as attachment to and investment in the pregnancy, reproductive history, relationship with their partner, cultural influences, and personality, to name a few [68]. Investigations of online support following pregnancy loss indicate that factors such as gender and sexual identity further inform experiences of stigma and social support needs surrounding pregnancy loss [7,72].

Taken together, research has explored online social support for and disclosure of pregnancy loss [2,3,5–7,51,72]. Research also indicates the importance of perceived similarity in social support [42,43,85,86,94], as well as social comparison [32]. With few exceptions (e.g., [72]), these works do not address similarity in support contexts beyond broad experiential similarity, nor do these works address social comparison within pregnancy loss support contexts. We thus know less about what factors inform perceptions of similarity for people in online support groups, including after pregnancy loss, and how social comparison takes place in online support spaces for pregnancy loss.

We therefore ask:

- RQ1: How is social comparison present in social media-based support groups for pregnancy loss[1]?
- RQ2: What aspects of similarity and difference appear salient to social comparison and social support in the context of pregnancy loss?

3 METHODS

We conducted semi-structured interviews with 18 individuals who had physically experienced pregnancy loss. We recruited participants through a combination of advertising the study on the authors' social media accounts (generating 6,326 total overall impressions); on a university-maintained health study volunteer database (with more than 74,600 members); and via a recruitment firm. Individuals interested in participating completed a screening questionnaire; respondents via the health study volunteer database and social media calls completed this questionnaire through Qualtrics, while the screening survey was embedded in our study posting through the recruitment firm.

Eligibility criteria specified that individuals must be at least 18 years old, live in the U.S., have experienced pregnancy loss within the last two years, and joined or considered joining a support group on social media following loss to participate in the study. Requiring participants to live in the U.S. provides a more consistent social context in which to situate pregnancy loss. Requiring that participants had experienced pregnancy loss within the last two years helps to ensure (1) a more consistent social media landscape across participant experiences, (2) a recent enough event that participants can recall their social media behaviors, support needs, and impressions of support groups at the time. We also specified *physical* experiences of pregnancy loss as an eligibility criterion to further scope the population of interest and enable a generative analysis across participant experiences guided by our research questions; while pregnancy loss can undoubtedly also be difficult for partners and significant others, this study did not include this group as they often have unique social support needs [20] which may be in tension with their partners'. In addition to eligibility questions, the screening survey asked respondents to indicate on which social media platforms they had joined or considered joining a support group, which platforms they used for personal use, and demographic questions (e.g., age, gender, sexuality, pronouns, race/ethnicity, education, and income level). We received 32 responses to the survey and 37 potential participants via the recruitment firm.

We purposely sampled participants using maximum variation [70] as a guiding principle to include a range of identities and identity intersections (along the dimensions of race/ethnicity, gender, sexuality, education, and income) in an effort to capture a wide range of preferences, perceptions, and experiences regarding loss support resources on social media [70]. As individuals who had considered but not joined groups were also of interest, given their potential insight into barriers to social support as well as the ways that identity comparison may inform decisions to join pregnancy loss support groups [7], we also used criterion sampling [70] to include this group. Our initial call was open to people of all genders and sexualities, though the majority of survey respondents self-identified as cisgender, heterosexual women. Therefore, following 13 interviews, we adjusted our call for participants slightly to emphasize our interest in speaking with individuals who identify as lesbian, gay, bisexual, transgender, or queer (LGBTQ+) and who had physically experienced pregnancy loss. Saturation of observed themes, in that no new themes that

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[1] We focus on the experiences of individuals who have physically experienced pregnancy loss; this excludes partners and significant others who may also be affected by pregnancy loss. We expand on this decision in section 3.

address our research questions surfaced in analysis (described further in section 3.3), informed the final sample size of 18 participants [27,37]. The demographics of our final participant sample are reported in Table 1; the information in this table reflects participants' self-descriptions of gender, pronouns, sexuality, age, race, and ethnicity, as well as income and education ranges.

3.1 Data Collection

Interviews centered on participants' experiences seeking, considering and/or joining, and participating in support groups on social media in relation to pregnancy and pregnancy loss. We also probed participants' perceptions of similarity and difference, in terms of pregnancy loss experiences and personal identities. We developed slightly different interview protocols to probe experiences of *considering* joining groups and of *joining* groups. For example, in cases where participants had not joined groups, we framed questions in terms of conjecture, rather than recall (e.g., what similarities to your experience *would* be important for you to see reflected in a group?). Both protocols included a cognitive mapping exercise [69] to better understand participants' support needs and social media use during their pregnancy and loss journeys. Mapping allowed an additional means of (1) comparing participants' social media use during pregnancy and loss experiences to their present engagement with social media, (2) understanding how their needs and usage changed over time, and (3) capturing participants' experiences in their own words and/or visualizations. With permission, we collected photos of participants' maps during interviews. While analysis of participants' maps is not addressed in this paper, participants' explanations of map contents are quoted here as relevant to the themes we report on. The first and second authors conducted interviews remotely in October and November 2021. Interviews lasted 36–84 minutes (avg. 60 minutes) and varied in duration according to participant responses and time taken to share images of participants' cognitive maps. All participants were offered $40USD Amazon gift cards as compensation.

3.2 Ethical Considerations

The authors' institutional IRB determined the study exempt. However, given the sensitive nature of interview topics, we included additional considerations to ensure participant comfort and privacy. These included reminding participants that they could decline to answer any question(s), could pause or end the interview at any time, and were not required to appear on camera during the interview (though some chose to). With permission, we audio-recorded all interviews. Following interviews, interviewers and participants debriefed the experience, and we offered to provide resources (e.g., hotlines, information) to participants for further support. The first and third authors have extensive experience conducting research interviews on emotionally difficult and sensitive topics.

3.3 Data Analysis

We coded transcribed interviews using Dedoose, a qualitative coding software, in two rounds. Together, all authors developed a first-round descriptive coding scheme, which reflected deductive codes based on literature, theoretical framings we considered applying in analysis (e.g., social support types, social comparison broadly), and research questions (e.g., similarity, temporality) [66]. Next, the first and second authors co-coded two transcripts to assess the coding scheme and to establish intercoder agreement; all authors discussed the transcripts and coding scheme. During this process, the first and second authors added subcodes and collapsed codes as appropriate. They co-coded two transcripts in line with Campbell et al.'s [18] recommendation of using 10% of a qualitative data set to establish intercoder agreement. Given our goals for analysis (i.e., not quantifying findings), we determined that inter-coder agreement was a more appropriate indicator of consistency than inter-rater reliability [62]. Once we reached agreement on codes and their meaning, the first and second authors coded the remaining transcripts, conducting weekly check-ins during this process. Second-round coding involved the first author recoding excerpts related to social comparison using categories derived from literature (e.g., comparison directions). The first and last author frequently met to discuss and refine themes and connections between them surfacing in this process.

3.4 Limitations, Reflections, and Directions for Future Work

Despite purposive sampling, the perspectives of LGBTQ+ people who have experienced pregnancy loss were not well-represented in our data. Prior work suggests, however, that LGBTQ+ individuals may feel that their loss experiences are not comparable to and cannot be understood by cisgender/heterosexual individuals who have also experienced loss [7,72]. In other words, identities related to gender and sexuality may impact perceptions of similarity and difference, and comparison by extension, more than the findings of this study indicate. Similarly, given the small sample size (which is appropriate for this type of qualitative research [27]), the demographic, identity, and experiential characteristics related in this paper are not comprehensive, nor generalizable. In a different or larger sample, additional characteristics, such as education level and household income, may be salient in ways that didn't materialize in our interviews. Future research could build on this work using quantitative methods, such as surveys, to examine the prevalence of various identity/experience attributes across a larger sample of individuals experiencing pregnancy loss, or to draw correlational or comparative conclusions across groups of interest. Our findings are further limited by participant self-selection [63], in that only the perspectives of individuals who were willing and comfortable sharing their pregnancy loss experiences with researchers are represented.

We also intentionally limited participation in the study to individuals who had *physically* experienced pregnancy loss and thus do not address the experiences of partners and significant others who are also affected by pregnancy loss. As scholarship suggests, these experiences are valid though may surface different support needs than physically affected persons and therefore would have complicated our data and analysis in a way that would not have been productive to address our research questions. We specify the shared experiences of physical pregnancy and loss to provide a more consistent basis for analysis. As our findings show, the shared experience of physical pregnancy did surface as relevant to assessments of similarity/difference for several participants. Future work could explore social comparison among partners/significant others who have experienced pregnancy loss, as well as compare perceptions of similarity, difference, and comparison more broadly between physically affected persons and partners.

Finally, social comparison (in any direction, with any outcome) appeared more relevant for some participants than others; this aligns with research suggesting that internal factors (like self-esteem, which are beyond the scope of this study) affect individual disposition for comparison [16,36,57,88], but means that the experiences of individuals predisposed to engage in comparison may be overrepresented in this paper. Future research could explore the identity and experience factors identified in this study in conjunction with additional measures (e.g., self-esteem, social comparison orientation (SCO), "stage of miscarriage journey" [51]). Additionally, future research could build on this work to examine correlational connections between identity/experience factors and specific comparison directions and outcomes.

Table 1. Participant Demographics

P#	Joined/ Did Not Join (DNJ) Group	Age	Gender/ Pronouns	Sexuality	Race	Ethnicity	Education	Household Income
1	DNJ	31	F, she/her	Straight	Non-white/ Hispanic	Pacific Islander	Postgrad degree	$90-99.99k
2	Joined	27	F, she/her	Bisexual	Black/ African American	Jamaican	Some college	$20-29.99k
3	DNJ	21	F, she/her	Pansexual	African American	Nigerian American	Some college	$20-29.99k
4	DNJ	22	F, she/her	Bisexual	Middle Eastern	Middle Eastern	Undergrad degree	$50-59.99k
5	Joined	32	F, she/her	Straight	Black/ African American	Black/ African American	Finished high school	$20-29.99k
6	Joined	27	F, she/her	Straight	Black	Black	Some graduate school	$35-49.99k
7	Joined	42	F, she/her	Heterosexual	African American	African American	Undergrad degree	$80-89.99k
8	Joined	36	F, she/her	Straight	SE Asian	Cambodian	Undergrad degree	$125-149.99k
9	Joined	27	F	Straight	Hispanic	Mexican	Some college	$50-59.99k
10	Joined	28	F, she/her	Straight	Asian	Indian	Postgrad degree	$60-69.99k
11	Joined	34	F, she/her	Straight	Black	African American	Undergrad degree	$80-89.99k
12	Joined	30	F, she/her	Straight	Black	Black	Some graduate school	$50-74.99k
13	DNJ	32	F, she/her	Straight	Middle Eastern	Middle Eastern	Undergrad degree	$150-174.99k
14	Joined	30	F, she/her	Straight	Black	Black	Graduate degree	$25-34.99k
15	Joined	35	She/Her	Bisexual	Black	African American	Undergrad degree	$200K+
16	Joined	35	F, she/her	Bisexual	White	American	Postgrad degree	$100-124.99k
17	Joined	32	F, she/her	Bisexual	African American	non-Hispanic	Finished high school	<$20k
18	DNJ	32	F, she/her	Bisexual	Biracial (African American / White)	Biracial	Finished high school	<$20K

4 FINDINGS

Our findings consider participants' attitudes toward experiential and identity-based similarity and difference through the lens of social comparison. We first present themes of upward and downward comparisons, including contrast and assimilation outcomes (RQ1). We then outline a set of identity and experience attributes that appeared salient to perceived similarity and comparison and reflect on the theme "a loss is a loss" as indicative of critical dimension similarity (RQ2). Table 2 includes definitions of comparison types and directions, as well as illustrative themes of each.

In using terminology like "downward" and "inferior," we emphasize that this terminology appears in social comparison literature to describe the relative positions of individuals in moments of comparison and allows us to situate our findings in this larger body of work. We do not assign judgment to this terminology, nor do we assign judgment to the perceptions, explanations, and behaviors shared by participants, who were in various stages of coping with, grieving, and healing from pregnancy loss.

Table 2. Comparison types, definitions, and illustrative themes

Comparison Type	Definition	Illustrative Theme
Upward contrast	Comparison in which target appears "better off" than comparer *and* comparers' "self-evaluation moves away from the standard" [35:178]	4.1.1 Glamorization of pregnancy 4.1.2 Loss not as significant/valid 4.1.3 "Success" stories
Downward contrast	Comparison in which target appears "worse off" than comparer *and* comparers' "self-evaluation moves away from the standard" [35:178,96,97]	4.2.1 Loss "not as bad" 4.2.2 Competitive grief
Upward assimilation	Comparison in which target appears "better off" *and* "comparer's self-evaluation moves toward the comparison standard" [25,35:178]	4.3 "Success" stories
Downward assimilation	Comparison in which target appears "worse off" *and* "comparer's self-evaluation moves toward the comparison standard" [35:178]	4.4 "I'm never going to get better"
Lateral	Comparison with a standard who is "equal to the comparer" [35:181,43]	4.5.2 "A loss is a loss"

4.1 Upward Contrast

We focus on two themes observed in relation to upward comparisons resulting in contrast: the glamorization of pregnancy, childbirth, and parenthood on social media broadly, and feelings that one's loss was not as significant or valid as others' losses. We also note that viewing "success story" posts (e.g., posting about a positive pregnancy test or childbirth experience) sometimes resulted in upward contrast comparisons. We discuss the impact of "success" stories further in section 4.3, in connection to upward assimilation.

4.1.1 Upward contrast: Glamorization of pregnancy and loss on social media. Some participants commented that posts about pregnancy and childbirth on social media more broadly (i.e., outside of support groups) appeared glamorized. This theme reflects the social positivity bias observed on social media [75,89] and informs some participants' decisions to seek out social media groups targeted to pregnancy and loss experiences.

P3, for example, did not formally join a support group, but sought out encouragement on social media following loss and was interested in seeing other young people who had lost children. More specifically, she sought encouragement on Reddit and Pinterest—sites she had also used for encouragement during pregnancy—as she considered these spaces to be "not as filtered" as Instagram. She noted, "on Instagram, a lot of what you see is [at] surface level, actually; you don't get to see what's actually going on. And I just saw too many happy faces and didn't get the support and information I was trying to find." The positivity apparent on Instagram interfered with P3's ability to access support from similar others (i.e., other young people who were grieving pregnancy loss). For P2, the resultant contrast between her experience and others' portrayals on social media broadly spurred her to join a loss support group on Facebook. She explained,

> "You see everybody having babies, everybody getting pregnant [...] it does emotionally mess with you, even though you can just exit the app. [...] So I feel like that would have been one of the reasons why I went searching for those groups."

This example illustrates upward contrast in that P2 felt different from (i.e., contrast) others who had easier (i.e., upward) experiences with pregnancy. Joining support groups more aligned with her loss experiences helped P2 to contextualize pregnancy and loss as well as access support from others who had experienced loss. Importantly, this did not require P2 to disengage from social media; as other research shows, social media are often crucial venues for disclosure of and social support for people managing pregnancy loss and associated stigma and distress in ways not available offline [1–3,5–7,38,72].

P1's experience provides a contrasting outcome. P1 did not formally join a group and found that curated portrayals of pregnancy and loss on social media, such as Facebook and Instagram, invalidated her experience. "I hate that it's glamorized," she explained. "I think Facebook in general puts a lot of glamor on like, 'this is my family' [...] and I don't think pregnancy is that [glamorous] at all." These representations also discouraged P1 from seeking support for loss by "help[ing] me learn how to mask it." She continued,

> "As opposed to support, it was just kind of like, okay, these other women have dealt with this too, but they're packaging it in this way. And even though they said, you know, that their kid had their umbilical cord wrapped around their neck, [...] this is the picture that they chose to post and it's flawless. It just kind of taught me like, 'Hey, you dealt with this, but so did everybody else, so it's really not that big of a deal. So just kind of suck it up and deal with it.' No matter how sad you are, you just have to package it nicely, because that's what social media said to do. As opposed to, 'You went through something and it's okay to feel this way and it's okay to post about it."

Such "packaged" portrayals of pregnancy and loss may gloss over physical and emotional difficulties and contribute to feelings of inferiority (i.e., upward comparison) in those who did experience difficulties (i.e., contrast). These examples suggest that upward contrast with accounts that downplay difficulty and hurt may paradoxically spur and deter support seeking.

4.1.2 Upward Contrast: Loss Not as Significant or Valid as Others'. Social comparisons to others' losses can involve quantifying loss. In comparisons resulting in upward contrast, participants recalled feeling as if their loss was less valid or severe than others'. As with glamorization, which may minimize difficulty in others' experiences, perceptions that one's loss was not as valid as others' affected support seeking. P13, for example, reflected that, "It just didn't feel like I should be so upset, because [other women] had gone through such a more difficult experience." In this case, the relative difficulty of experience contributed to upward comparison, while the difference P13 perceived in her and others' emotional response (e.g., "upset") to loss contributed to perceptions of contrast. As a result, P13 did not join a loss support group or post about her loss experience. P13, however, did not necessarily fear judgment or invalidation from others, as she explained, "it wasn't like I wouldn't be accepted in a group like that, because I'm sure I would have been." This differs from comparisons initiated by others that perpetuate judgment.

P4, for instance, who briefly joined a support group, recalled comparisons made by older women in the group regarding age (P4 is 22 years old). She explained,

> "[In] one instance, I mentioned my age and a woman had said that I had plenty of time to try again. And that…this one doesn't matter, just forget about it, it doesn't matter, they're in the past. Because there will be another time. Whereas they said that they were in or near their 40s, so their loss was more significant than my loss, because I was young."

This comparison invalidated P4's loss experience and contributed to her feeling that she did not "fit" with the support groups she considered. As P4 and P13's experiences highlight, both self-made and other-initiated comparisons can affect support seeking.

4.1.3 Upward Contrast: "Success" Stories. The topic of "success" stories, in which individuals announce pregnancies or births, appeared connected to social comparison in several ways (we address these further in section 4.3). In one sense, some loss groups discouraged or prohibited (e.g., via participation rules) posting "success" stories, as such stories could be deeply triggering and discouraging to members. P2, for example, was in groups related to both pregnancy and loss and noted,

> "[in] my pregnancy groups, there were people who—because it's a natural thing to get pregnant, it's natural also to lose the baby—I would see that they were way more, I guess, caring, for each side. But when it comes to the loss groups, it's more like, if you're looking for a pregnancy group then you need to go find one."

That "success" stories were more accepted in pregnancy and fertility-related groups (e.g., In Vitro Fertilization [IVF], home birth) than in loss groups was echoed by other participants (below). The distinction between pregnancy and loss, however, is imprecise, as many participants (1) reported joining groups related to pregnancy, loss, and in/fertility across their pregnancy and loss journeys, (2) were sometimes in multiple groups with varying rules and foci, or (3) experienced loss while in an infertility support group. Although the experiences quoted below occurred in groups not explicitly about loss, they illustrate how "success" stories encountered in supportive spaces can contribute to upward contrast comparison for individuals who have experienced loss but are still trying to conceive.

Within loss support groups and groups related to fertility and pregnancy (e.g., IVF, home birth), some participants recalled that seeing group members post about positive pregnancy tests or birth experiences after loss led to upward comparisons and feelings of inferiority or inadequacy. P17, for example, recounted the effects of seeing birth announcements in home birth groups (which she had planned to have) following her loss:

> "Even though I had other children at that particular time, if I'd seen someone posting about, 'Hey, I just had my baby,' it kind of made me a little bit more sad. Like it's like, 'Whoa, now you're having your baby. Yeah, yeah it's great, but I want my baby too.'"

As P17 notes, seeing others post birth announcements reminded her of loss and contributed to a negative affective response.

Participants who had experienced loss but were also in fertility-related support groups, like P15, related similar experiences. She explained,

> "Because you're doing IVF, you find out so very early on in your pregnancy that you're pregnant. So it's unlike other people, so it's not like you really have to question 'Am I pregnant or am I not?' like, we know pretty much right away. And I guess that can be unhelpful, sometimes, you know, if you're still in the group and maybe you just had a loss and someone that's been along the same journey as you posting that they just got a positive pregnancy test."

Experiences like P15's and P17's demonstrate the complicated nature of support for pregnancy loss. Many participants reported joining online support groups for pregnancy *as well as* loss and were sometimes in multiple groups simultaneously. P8, who joined an infertility group following loss, commented,

> "I didn't want to hear about people's success stories because it's just like, it's great for them, but I'm still struggling. But it's not fair to say, like 'Don't post that,' because it's a happy moment for them."

P8 thus acknowledges a tension between personally not wanting to see "success" stories and understanding the significance of such stories for the posters, particularly in the context of infertility support.

As these examples imply, "success" stories from others on similar journeys were often understood as potentially triggering, such that groups might actively discourage them, and could amplify perceived contrast between participants and group members. Despite such posts being disappointing or saddening, participants recognized a tension between personally finding such stories unhelpful and wanting others (i.e., those posting) to feel supported. We expand on this tension in section 5.2.2.

4.2 Downward Contrast

Our findings highlight two themes derived from instances of downward contrast—perceptions of one's loss being "not as bad" as others' losses and encounters with "competitive grief" (Gibson et al., 2020). The former theme is *semantically* similar to upward contrast but differs in terms of *how* participants positioned themselves in relation to comparison targets and interpreted resulting comparisons.

4.2.1 Downward Contrast: Loss "Not as Bad" as Others'. In addition to upward contrast associated with feeling as if their loss was not as valid or significant as others' (discussed in section 4.1.2), participants also noted comparisons with others perceived to be worse off or as having a more difficult loss experience than themselves (i.e., downward targets). Rather than invalidating loss, these comparisons resulted in sympathy for comparison targets and reaffirmed contrast; in some cases, this led to participants leaving groups or reappraising their needs and healing journeys.

P13, who did not formally join a group, recalled comparing her experience with that of a friend who had experienced multiple miscarriages and was offering support: “I think she was trying to be supportive too, but I would almost feel like, when she was trying to support me, I would just kind of feel badly for her knowing that she had been through that.” P13 thus found it challenging to receive support from an experientially-similar other whom she perceived as having a more difficult loss experience(s) than herself (i.e., downward comparison target).

In some cases, perceptions that group members were worse off than themselves (or not able to cope as well as they could; i.e., downward comparison targets) led participants to reappraise their situations and/or seek support elsewhere. P15, for instance, commented, “I’m thankful for my mental fortitude, but I’ve seen some women that just really aren’t as mentally prepared for something like that.” Seeing others experience mental and emotional difficulties following loss amplified contrast and helped P15 appreciate her own perceived resilience. Similarly, P11 felt that other group members’ posts provided perspective that helped her cope:

> “Everybody came from their own background, their own, you know, family, it was some women, you know, that were single parents. This was their only child that they lost. And so it kind of put things in perspective for me that you know, it could have been worse, I could be in a worse situation and like, everything happens for a reason, you know, so that everybody had different backgrounds and their own experiences and it helped me deal with mine, I guess cope.”

Here, P11 suggests that the experience of losing an only child as a single parent is “worse” than her loss, reflecting downward contrast comparison; this encounter affected how she appraised and coped with her own loss experience.

Feeling sympathy for others appeared in relation to comparisons concerning emotional needs and states as well as informational needs. P16, who sought medical information about fertility, recalled joining groups about specific conditions related to infertility (e.g., Interstitial Cystitis, Polycystic Ovary Syndrome) in which she “felt so bad” for other members: “Some of these women were like, ‘We have to go get catheters’ and they [still] couldn’t get pregnant. And I was like, ‘Oh no, I’m not doing all this. I’m not that bad.’” P16 ultimately left health support groups that she felt were unhelpful (i.e., did not help her figure out the cause of her fertility issues), irrelevant (i.e., ruled out by medical providers/tests), or unsupportive (i.e., made her feel worse; explored in section 4.4).

Comparison directions may take time to reveal, as more information used to evaluate the comparison target becomes available. Consequently, comparisons may change over time. This appeared the case with P17, who recalled following a particular group member’s posts:

> “I would read her posts, and she would post frequently. And that was the way that she was able to heal was she posted about everything that she felt and everything. And I was reading some of her stuff and just looking at it from her standpoint and noticing my growth, because I’m like, ‘Okay, I remember feeling like that’. [...] Like, I don’t want to go down the same rabbithole she’s going down right now, so let me make sure that I’m pushing myself to stay afloat, then I can feel what I’m feeling, but I will not fall into pity. I will not go into a depression. I’m determined. I have children, I have a family, like, I have to keep up.”

In this example, P17 sees her past emotional state reflected in a group member's present experience; this enabled P17 to reflect on her own progress in processing loss, as well as determination to continue healing.

4.2.2 Downward Contrast: Competitive Grief. Participants noted experiences with a sort of competitive grief without resolution, which they found unhelpful to coping with loss. Competitive grief was not always mentioned in the context of social comparison, though participant quotes do imply that such groups and/or members were beneath them or worse off. Additionally, competitive or ruminative grief clashed with participants' beliefs that such emotional disclosure should progress to something beneficial (e.g., facilitate healing) and/or was perceived as unsupportive. P15, for instance, described an ideal group as "something that actually [has] healthy, supportive mechanisms, not just women exchanging war stories [...] some of them really go through the wringer with these losses."

As implied previously, some participants, like P13, found it difficult to accept support from individuals perceived to be worse off than themselves; Participants characterized groups perceived as fostering competitive grief or "war stories" were similarly thought to be as unsupportive. P17, for instance, recalled leaving one group that "was just so overwhelming. It didn't help anything at all. It was just like, bam, in your face, like 'woe is me,' there was no resolution. [...] there wasn't any way to find a happy moment, it was just all sad." Similarly, P18 recalled surprise at a group for military spouses being "catty." She explained, "especially in a group about infertility where you would think everyone is coming together and helping. Oh my God. Like, how are y'all fighting?" In these groups, unsupportive dynamics between members—such as fighting and disclosing only "woe is me" stories—overshadowed support exchange and potentially contributed to contrast between participants and group members.

While scholarship shows that comparisons to downward contrast targets may enhance one's self-esteem or aid in appraisal [83,96], these examples also highlight how downward contrast and related phenomena (i.e., competitive grief) can interrupt social support processes.

4.3 Upward Assimilation: "Success" Stories

In addition to contrasting comparisons, participants also recalled comparisons with group members with whom they not only identified (in ways including and beyond similarly having experienced pregnancy loss), but also viewed as "better off" than themselves in some way. These connections often facilitated emotional support or provided encouragement in the sense that one felt they were not alone and that they could get through loss with someone else.

In some cases, participants pointed to "success" stories, or experiences of targets who were more advanced in their healing journeys. Assimilation with such targets appears in tension with contrast and the perspective that "success" stories were unhelpful for some participants (noted earlier in section 4.1.3). As P2, for instance, explained, seeing "success" stories "just kind of, lets you know, like, this person looks like me, or is kind of like me, and this is what they're doing, they're still here, they're still pushing through. And so, it's almost even better when you see someone that looks like you going through something [you are] and they've got through it." Here, P2 specifies someone who "looks like me or is kind of like me" (e.g., in terms of age and race as well as loss experience) as a comparison target; pointing to someone who "got through" what one is currently experiencing indicates upward comparison, while the encouragement provided by seeing this person suggests assimilation.

While the mechanisms informing what type of comparison a "success" story sparks are beyond the scope of this paper, we note that perceived similarity between participants and comparison targets appears to play a role in upward assimilation comparisons. What constituted similarity of identity and experience varied across participants. For example, P13, who found it difficult to receive support from a downward target (i.e., someone who had experienced multiple miscarriages and had a "worse" loss experience than herself), recalled:

> "I have a friend and she, for her first pregnancy, suffered a miscarriage around the same time that I did. So she was a support because, again, she had been through it. And then she had been able to have two kids after that. So she kind of had seen the light at the end of the tunnel, had gone through that grief journey and then had come up with, like, a great ending. So she was able to be really encouraging to me through my grief."

For P13, the timing of loss (i.e., point in pregnancy at which loss occurred) was a salient similarity (as we explore further in 4.5.1), that she valued in a support provider. That this friend had also been able to have children following loss furthered the appraisal support available via this comparison, perhaps especially as P13 was pregnant at the time of the interview.

For P9, others who had experienced multiple miscarriages, like herself, were important comparison targets. In addition to providing encouragement, comparisons to another group member who had also experienced multiple losses helped reframe loss for P9:

> "There was somebody who had about three miscarriages, still less than me, but she did have a success story. They were going to actually end up trying to go through IVF, in case that was the issue. And they didn't even have to end up making it to their appointment, she ended up being pregnant. So that made me feel good. I was like, 'Okay, you know what, maybe it's just something that I have to change. I don't know, but like, I'm gonna have a baby one day. I'm going to. If she could do it, I could do it too.'"

For P9, the frustration of experiencing multiple miscarriages with no explanation was isolating; seeing others with similar experiences of multiple miscarriages not only helped P9 to feel less alone, but also provided targeted, relevant information (P9 eventually discovered and resolved medical issues that complicated pregnancy). This example also illustrates how appraisal support, emotional support, and informational support may overlap, as one may see not only *that* a similar other "succeeded," but also *how*. This type of "role modeling" support [42] was particularly valued by some participants, including P6, who felt that a group could provide her better support "by giving me feedback." She explained, "Like for every individual in the group to say, 'How do you feel 10 months now, after all that?' I wanted that progress, how are they feeling, so that I'd be able to know, how will things work for me?" Insight into how others coped and are coping may not only provide encouragement but also help manage uncertainty (i.e., wondering if "it will get better") associated with grief and loss.

4.4 Downward Assimilation: "I'm Never Going to Get Better"

Downward assimilation was somewhat less salient than other comparison directions in our data, though did appear relevant to some participants' experiences. In some cases, like P16's, downward assimilation and downward contrast appeared closely related. That is, while seeking information on medical conditions that might contribute to infertility, P16 joined groups about conditions she suspected might be contributing to her infertility and loss experiences. At times, being in these groups resulted in contrast (i.e., "I'm not that bad"), and at other times, members' posts fed fears about her personal health, implying assimilation (i.e., identifying with others who had the condition). P16 explained, "when I was in all these groups, I was like, 'Oh my God, I'm never going to get better.' [...] 'I have to get out of this group.'" Being in groups about specific health conditions facilitated a sort of identification with that condition, as P16 sought information from others with conditions she suspected she might have.

In a similar sense, P1 did not join a group in part because she perceived that being in a loss support group meant identifying as someone who had experienced loss. She explained, "I just didn't want to acknowledge that part of me at all. Like I wanted help, but I didn't necessarily want to carry it out because that means that this happened to me." While the experiences of P1 and P16 differ from other comparisons in that there is not a specific individual acting as a comparison target, they speak to downward assimilation in the sense of assimilating with an identity (i.e., a person with a specific health condition, a person who has experienced pregnancy loss) seen as undesirable or challenging.

In a broader sense, the risk (inasmuch as downward assimilation is associated with negative affective outcomes [17]) of downward assimilation was implied in participants' apprehension that groups could worsen, rather than heal, pain. As P11 noted regarding first deciding to join a loss support group, "I wondered, would this actually make me feel better? Or would it make me feel more depressed? And so I hesitated." P17 similarly wondered, "Was this [joining a group] going to make it worse?" While other mechanisms or attributes of support groups besides comparison may result in "feeling worse" [59], we note participants' apprehension of negative affective consequences as influential to support seeking decision-making. As the quotes in this section suggest, participants were cautious of downward assimilation comparisons, sometimes to the point that they did not join or left groups to avoid them.

4.5 Similarity and Difference Within Social Comparison

In this section, we review attitudes toward similarity and difference. [Moved down] Our findings suggest that perceptions and valuations of similarity (inasmuch as similarity shapes support needs and notions of supportive others) vary considerably across individuals. We highlight the sentiment "a loss is a loss" as indicative of primary dimension similarity as sufficient for some, specific attributes of identity (i.e., race/ethnicity, age, values, relationship status) and experiential (i.e., physical experience of loss, health contexts, loss timing and history,) similarity that others desired, and the role that difference played in some participants' comparison and coping processes. Our findings add nuance to what similarity means in the context of "similar others" and online support, and what kinds of similarity and difference matter in coping with pregnancy loss. We note that while gender and sexuality did not surface in our data due to our sample's limitations, prior work [7,72] identifies both as important similarity attributes in seeking social support after pregnancy loss online.

4.5.1 Similarity. An interest in finding experientially similar others motivated many participants' search for support groups. For participants like P4, feeling supported in additional aspects of similarity (beyond the shared experience of loss categorically) was a standard she held when considering joining loss support groups. P4 explained,

> "I figured being young, engaged, and someone who's schizophrenic, it would be a little difficult to feel heard and felt as if other people knew what I was going through outside of just losing a pregnancy. I often feel I need more than just one thing in common with someone. So I didn't think I would fit in, I'd feel out of place and that my problems would be too much for a group like that, to understand that I'd just be constantly explaining things. So I didn't join any groups."

Additional dimensions of similarity may thus provide a basis for mutual understanding and validation of self and experience that is invaluable in coping with and grieving pregnancy loss.

As referenced in sections 4.1–4.4, certain attributes, such as age, appear relevant to participants' comparison and support experiences; in this section, we explore participant explanations as to *why* particular identity and experience attributes are salient to perceptions of similarity.[2]

Race & Ethnicity. For some participants, seeing others who shared their racial or ethnic identities motivated their interest in joining support groups as well as informed comparison. As P5 noted, "I was wondering, how do Black women keep going? So I was really drawn to see, like, how we keep going. You say you had a miscarriage a month ago, but you're back out doing everything, so. I was wondering, like, how do you Black women do it?" In this example, P5 also alludes to cultural expectations around pain and perseverance that are informed by race/ethnicity. Similarly, P6 felt that seeing stories from people with similar racial and ethnic backgrounds would be helpful because of the cultural values associated with that identity. Specifically, and connected to her desire to see someone with a similar relationship status as her, P6 valued togetherness and a sense that others were trying to understand her.

Participants also connected the shared understanding facilitated by a shared racial/ethnic identity to systemic issues related to pregnancy and health care more broadly. As P1 explained, "I want to be in a group full of brown women, like, we have similar medical histories and things like that. Indian women, compared to Black women, compared to Asian women, have completely different medical concerns than white women." For P1, racial/ethnic diversity and representation in a group enabled a deeper level of understanding and connection, particularly in the context of medical care around pregnancy and loss.

Perceived racial/ethnic similarity contributed to social support in other ways beyond explicit comparison and validation. For P3, for example, seeing other Black women affected her sense of safety: "it would have been nice to have one [group] centered toward Black mothers or just mothers of color in general. [...] I feel safer when I see someone that looks like me and who's going through the same thing as me." Shared identities that contribute to perceptions of safety in a group may also facilitate lateral comparisons and support exchange.

Age. Age appeared a relevant attribute in terms of both relating to others and making sense of pregnancy loss. As P3 explained,

> "If they're around the same age as me, they're most likely struggling with a lot of the same things I'm struggling with too. People who are older or even younger, we would all have that same thing [loss] connecting us, but we're in different periods of our lives. So it would be kind of hard to relate to their current struggles too."

In this example, age is an indicator of life stage and point of reference that adds dimension to the already similar experience of pregnancy loss. This also appears the case with P4, who, as quoted in 4.1.2, experienced invalidation because of her age. For others, like P9, seeing other people her age helped to dismantle misconceptions around pregnancy loss: "I think it just made me feel better knowing that, girls young like me it's happening to too. [...] Like I didn't know it was as frequent in younger girls." Collectively, these comments suggest that age is an important

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[2] As reported in Table 1, we collected household income and education information from participants in efforts to purposely sample participants from a diverse range of backgrounds and experiences, using maximum variation as a guiding principle [70]. In interviews, and our analysis by extension, these dimensions did not appear especially salient to participants' experiences with comparison and perceptions of similarity/difference and hence are not explored in depth in our findings. Similarly, while queerness did not surface as a common attribute of similarity amongst our participants, given prior research [7,72], we have reason to believe that this is a salient identity in shaping social support and coping processes for pregnancy loss.

similarity attribute for both representation and awareness as well as in providing a common basis (i.e., life stage, values) for comparison and understanding among group members.

Values. Some participants noted that religious and political values would impact their experience in a group. P13, who identified as Christian, posited that seeing her religious beliefs reflected in a group would affect her interpretation of loss, which parallels social comparison in facilitating appraisal [15]. She explained,

> "I think that would have been something important to me, that the other women kind of shared those same types of beliefs, you know, like a belief in heaven, a belief that there's purpose for pain. I'm not going through this awful thing for no reason, that maybe there's a greater purpose."

Connecting loss to a higher purpose affected how P13 related to loss. In a similar sense, P4 described an ideal group as one inclusive of people "who don't have internalized sexism and misogyny"; P4 felt that people who held sexist, misogynistic views were "already blaming themselves" in a way that was not conducive to healing. These comments suggest that shared values may be particularly impactful in shaping interpretations of loss in ways that do and do not perpetuate self-blame.

Relationship Status. For participants who felt they did not have a reliable partner with whom they could navigate loss, seeing others with similar relationship statuses provided validation as well as information. P6, for example, commented, "I wanted someone especially who was not in a stable relationship, so that I at least get to know what they are doing…[or] trying to avoid, just someone in the same scenario as me." For P6, who was in an unsupportive relationship when she got pregnant, seeing others with similar support systems was important in furthering her goal of figuring out how to cope with loss alone. P1, who described her relationship status at the time of loss as a "messy situation," similarly felt that relationship status could be an informative attribute of similarity—as well as difference. She explained, "maybe your marital status would be important [to see in a group.] So if you're dating, if you're not dating, if you're seriously dating, if you have multiple partners, like that, I think, would be more beneficial…than sexual orientation [would be]." She continued, "I think I would pull more information from people with similar relationship statuses. However, I'm not opposed to hearing about people with different relationship statuses just because…I want to know, like, does that [issue] exist for you too, kind of thing, and how are you guys dealing with it?" While many participants did not mention relationship status as a prominent dimension of similarity, the role of significant others did surface in other areas; we highlight connections to significant others' grief in section 4.5.3 and reflect on relationship status as indicative of support systems in section 5.

Physical Experience of Pregnancy. For some participants, the physical experiences of pregnancy and loss constituted an important dimension of similarity. This specification points to the grief and loss experienced physically as different from grief and loss experienced by supportive others (e.g., partners, family). As P12 noted, "the pain is all the same, as long as it's a woman." Here, P12 aligns womanhood with the ability to become pregnant and indicates that this shared ability/experience provides a basis for similarity. P11 similarly sought connections with "someone who has actually been through it." She continued, "Even with my husband, like, it's my body, you know, and I'm creating this being, he doesn't experience what my body goes through." These quotes suggest that, while significant others may also grieve pregnancy loss, the physical experience of loss provides an important basis of shared understanding that may motivate seeking loss support groups.

Health Contexts. Related to physical experiences of pregnancy, and as intimated by P4 and P16's comments, included previously, participants' health contexts motivated information support needs. For P4, for instance, taking medication for schizophrenia raised specific questions. She explained, "There's always the worry of 'will my medication harm my child?'" She continued, "I'd like to also get other people's personal accounts, not just case studies and information from my doctor, I have the other side of that. So that's why I also reached out." Finding personal accounts on pregnancy with schizophrenia on YouTube provided a valuable complement to the medical information P4 received from her doctor. This valuation of personal experience and personalized information also motivated others' decisions to seek and join support groups. P16, as previously noted, joined multiple groups about medical conditions to better understand and resolve fertility issues. Similarly, P15 joined a group associated with the fertility clinic she visited and found the space helpful for information as well as emotional support. She reflected on her posts in the group:

> "Early in the game, as far as like, how to make shots easier, 'what are y'all using?' 'My RE [reproductive endocrinologist] is wanting to perform this kind of test, has anyone else had it? How to prepare for it? Is it painful?' ...A lot of times it would simply just be 'Hey, did you guys see this motivational thing?"

These examples highlight that there are aspects of the health context(s) of pregnancy, loss, and fertility more broadly, that may require additional, specialized information and support that individuals with similar circumstances may be able to provide.

Loss Timing and History. Aspects of participants' loss experiences, particularly at what point during pregnancy loss had occurred and how many losses they had experienced, also affected comparisons and how participants related to others. P8, for example, explained, "I feel like there should be a different group [...] depending on how far along they were. Because—it's still the same thing, they're still experiencing a loss—but depending on how far along you are, that makes a big difference." Similarly, P13, who did not join a group, speculated that "having that loss at the same time I did, I think would [connect me to someone] more than anything, because [...] I think the main key is that bonding time you have with the baby and [...] that many more days you have planning, like, what life will be like with this baby." For P13, the timing of loss appeared connected to a broader context of grieving. The associations between timing and attachment, and attachment with loss reactions, are supported by previous scholarship on pregnancy loss [68].

In a similar sense, some participants associated seeing others who lost at similar times with support. P5, for instance, felt that seeing others who had experienced loss around the same time as she did was important for healing at her own pace. She commented, "I wasn't posting on social media, but I was still looking, and I was just like, 'wait, how are you up and about and outside laughing and out to dinner when I'm still in bed in my socks and pajamas crying, still don't want to turn over with my sonogram?'" Shifting attention from others on social media broadly to others who had also recently experienced loss reframed comparison and allowed P5 space to grieve. P11 similarly found that seeing others who lost at similar times provided "comfort in [the sense that] I'm not alone. [...] when you see people so similar, it just makes you feel like, okay, this was out of your control." Encountering others with similar loss circumstances can provide perspective and validation of emotional and physical aspects of loss.

Additionally, the number of loss experiences participants had affected how they were able to connect with and relate to others. We relate some of these experiences in connection with downward contrast, in which participants recalled others who had "worse" experiences than their own. For participants like P9, having multiple miscarriages became somewhat isolating. P9 explained that she wanted to join a group to "hear that I'm not the only one that continues to keep miscarrying." P9 was able to find support and encouragement (as we also note in section 4.3.1) in posts from others, even though, "I don't think anybody miscarried as much as I did." This example highlights the significance of similar loss histories in facilitating connection as well as suggests that similarity may not need to be exact to be impactful.

Indeed, we note that some participants did not personally consider aspects like timing to be salient in signaling similarity. P15 alluded to comparison in commenting,

> "I was…nine weeks pregnant when I lost my baby. But you have women that are far more into their pregnancies [and] lose their babies too. And while they might feel that, 'Oh, well, you were only nine weeks pregnant, you can't relate to me as someone who was 16 weeks pregnant.' That may be true, but for me, where I was, a loss was a loss. […] I had seen his heartbeat, but not heard it. No, I didn't see his little face, but he was there. And to me he was just as real as if I had been 16 weeks."

In this quote, P15 describes a sort of upward contrast, similar to that discussed in section 4.1.2, in which other women might invalidate or minimize her loss on the basis of timing. In response, P15 summarizes her perspective as "a loss is a loss." Other participants also expressed this sentiment, indicating that, for some, similarity along the critical dimension of having also experienced pregnancy loss, was sufficient in establishing a basis for experiential similarity. We explore "a loss is a loss" further in the next section.

4.5.2 "A Loss is a Loss". Several participants expressed the sentiment "a loss is a loss" to convey that simply experiencing pregnancy loss was sufficient to feel understood by or empathize with another person. Holding this sentiment and valuing similarity beyond the fundamental shared experience of pregnancy loss (e.g., race/ethnicity, age, values, relationship status, physical experiences, loss history, and loss timing) were not mutually exclusive. For example, P5, as previously discussed, found it important to know "how do Black women keep going?" while also acknowledging that "everybody just want[s] to have a kid" and "I wanted to see everything," in terms of characteristics and identities of support group members. The juxtaposition of "a loss is a loss" and value of similarity beyond loss speaks to how social comparison within support groups may facilitate multiple support needs (e.g., appraisal, informational, emotional needs).

In social comparison terms, the "a loss is a loss" perspective may be indicative of lateral comparisons [43], in which comparison targets are perceived as equal and similar others, provided they have also experienced pregnancy loss. P11, for example, reflected, "I guess it didn't make much of a difference about the age or race [of another person], you know, a loss is a loss." For participants like P2, "loss is loss" emphasized the similarity of grief, as "it still hurts the same." In this vein, some participants, like P15, explicitly sought to avoid comparison: "You're hurting, I'm hurting, you know, we don't really want to compare who's hurting more." For P17, this sentiment applied to a group that included partners, family members, and others affected by pregnancy loss. She explained,

> "A loss was a loss, so it didn't matter if it happened years ago, or the day before. […] if you experienced it, then you would be able to relate to me. […] It [the group] wasn't geared to just women, it was husbands in the group trying to get an understanding of other women that were going through loss so that they can understand their wife, it was mothers in the group, it was grandfathers in the group stating 'my daughter just

> experienced loss. It's hard on us.' They were looking for the same thing we were looking for, everybody was looking for a point of healing."

These comments suggest that perceiving pain or grief to be similar across experiences of loss, perhaps in contrast to perceptions of loss as greater (section 4.1.2) or worse (section 4.2.1), may facilitate empathy and emotional support exchange [43]. That "experienced others" appears to extend to significant others—as implied by P17's comment about husbands, parents, and grandparents—as well as those who have physically experienced pregnancy loss highlights one way that lateral comparisons (in which loss is still the critical dimension of similarity) may challenge isolation associated with grief.

In summary, "a loss is a loss" does not challenge the importance of similar attributes (presented in 4.5.1), per se, but rather presents a "both/and" scenario in which participants perceived value in both seeing specific experiences/characteristics reflected in others' stories *and* seeing the experiences of others who were not like them along some dimensions.

4.5.3 The Difference that Difference Makes. Individuals who shared the sentiment "a loss is a loss" often found value in seeing others different from them. That is, some participants felt that encountering others who were also coping with pregnancy loss but held different identities provided perspective, or a means of reframing grief through comparison.

One way difference appeared influential in comparison was in challenging self-blame or normalizing pregnancy loss. P2, for example, explained that seeing others' experiences, "basically put it in perspective that this happens." She continued,

> "[Loss] could happen very quietly or it can happen very loud, but it's still a really bad thing, if that makes sense. [...] And so, it was kind of like I would be able to see that, and it would kind of put it in perspective for me that you're not the only person that's dealing with this and that this is something you can push through because others are."

In invoking the volume of loss as a potential point of difference, P2 clarified that, while she perceived some group members' loss experiences as "worse" than her own, both experiences were valid (and "still hurt the same"). Here, the variety of experiences encountered in the loss group appear to also provide support (e.g., "you are not alone") and encouragement via comparison. P12 and P14 suggested that comparing their circumstances to others' challenged feelings of self-blame for loss. P12 explained, "[seeing] people who are different, I felt like it's not my problem. It [loss] cuts across, so it's not my fault in any way. It just didn't happen for me." Similarly, P14 said that seeing people with different identities helped her "realize this is not something that was my fault, like it can happen to anybody." These examples suggest that comparisons to others different from oneself beyond the critical dimension of similarity (i.e., experiencing pregnancy loss) may not include perceptions of superiority or inferiority; rather, perceptions of difference may reinforce that loss is not attributable to any particular attribute(s) of identity or pregnancy experience, and thus that one is not to blame for loss. This outcome is important in that it has the potential to challenge self-stigma, which is a barrier to social support [51,92].

In another way, the perspective provided by difference enabled an expanded understanding of grief after loss and extension of compassion to others. This reframing sometimes extended to significant others who were also affected by grief. Prior to interacting with the group P17 describes in the previous section, P17 recalled the impact of seeing family members, such as grandparents, grieving loss:

> “So first, I didn’t interact with the group. And I don’t know whether it was because I seen one of the posts from the grandpa. But then, after I read the post—because first I was like, ‘This man,’ like before reading his posts, I was like, ‘no, he don’t know what it feels like to lose a baby, like he’s not a woman, right? How could they even let someone like that come into the group?’ but I read his posts. And then when I read it, I wholeheartedly felt for him because I’d seen his reaction to the loss too. And that’s what made me realize, like, wait a minute, it’s not just me going through a loss. My family is too, like my husband. And so regardless of…his [my husband’s] reaction isn’t what I want it to be, because it’s not matching mine, it’s how he’s dealing with it. And their posts actually helped me a lot with that.”

This encounter helped P17 understand her husband’s perspective and extend him compassion in grief. Indeed, encountering different perspectives appeared especially influential in reframing grief as affecting significant others, such as partners and family, rather than an isolated (or isolating) experience. P18, for example, explained,

> “I wouldn’t mind if, for instance, like, say, there was fathers on there, you know, that lost their child, because that’s still a loss for them as well. Or even siblings, because pregnancy loss is a pregnancy loss. [...] and I would find that that would be insightful too, because maybe by hearing the father’s loss, you know, it could give me some insight to what, maybe my partner at the time was feeling, or my other children at the time were feeling.”

Although our data does not suggest that the inclusion of significant others who are also grieving loss in support groups bears on social comparison outcomes (e.g., boosting self-esteem), per se, this inclusion does appear influential in providing appraisal support to group members as well as in enabling support of one’s significant others.

While we frame similarity and difference as both potentially facilitating support and positive affective outcomes, it is crucial to reiterate that participants did not associate difference regarding certain attributes (e.g., values) with feeling supported. Rather, differences across certain attributes may interrupt individuals’ abilities to feel seen, understood, and supported. We reflect on this tension further in section 5.

5 DISCUSSION

Through interviews with 18 U.S.-based individuals who joined or considered joining a social media-based support group following pregnancy loss, we investigated social comparison processes within pregnancy loss support groups on social media. We make the following theoretical and design contributions:

- Provide an intracommunity description of social comparison within pregnancy loss support groups and how social comparison facilitates and interrupts social support in these spaces, leading to a preliminary model bridging social comparison and social support processes: *The Social Comparison and Social Support in Online Support Groups Model* (illustrated in Figure 1)
- Refine understanding of *experience* and *identity* attributes that inform perceived *similarity* and *difference* that are salient in social comparison within and beyond the context of online pregnancy loss support groups

- Identify dialectical tensions arising from identity/experience attributes (i.e., perceived magnitude of loss, "success" stories, attitudes toward similarity and difference broadly) that bear on affective outcomes of comparison and suggest design-based approaches to fostering support while addressing and minimizing the potential for maladaptive social comparison within online pregnancy loss support groups
- Propose the *tolerance principle* of online health support groups to describe the phenomenon of tolerating individual discomfort and potential negative affective consequences from exposure to undesired content due to the belief that others find it supportive or helpful—a principle for online support groups to uphold via design

We expand on these contributions in the sections that follow.

5.1 Bridging Social Comparison and Social Support

We take an intracommunity view on social comparison within pregnancy loss support groups on social media and illustrate how upward and downward comparisons (including contrast and assimilation outcomes) may manifest in such groups. An intracommunity lens reveals the diversity of experiences *within* a "shared" experience as a starting point and highlights the need for diversity within support groups to facilitate both in-depth understanding enabled by similarity *and* the perspective afforded by difference. While previous research has explored social support following pregnancy loss [1–3,6,7,51,72] and comparison within online support groups (e.g., [15]), our study bridges these areas by considering how social support and social comparison interact within online pregnancy loss support spaces.

5.1.1 Modeling Interactions Between Social Comparison and Social Support. Our findings show that social comparison can both interrupt and facilitate social support gained from support group membership and/or participation; this insight aids in explaining why individuals join, do not join, and leave support groups. Social comparison encountered broadly on social media (e.g., section 4.1.1) informed some participants' motivations to search for and join support groups, while comparison to others' loss experiences (e.g., section 4.1.2) informed other participants' decisions to not join groups. Both upward (e.g., section 4.4) and downward (e.g., section 4.2.2) comparisons also informed decisions to leave or reduce participation within certain groups related to pregnancy and loss.

These findings highlight social comparison as a mechanism that informs barriers to joining online support groups *as well as* the perceived disadvantages (e.g., encountering "success" stories, negative experiences of others) of online reproductive health support groups, identified in extant scholarship [59,60]. Findings regarding upward assimilation (section 4.3) highlight that social comparison can facilitate positive affective outcomes, such as hope for oneself and excitement for others; in this way, our findings validate recent online comparison work addressing inspiration and envy as outcomes contributing to individual well-being [12,64,65].

Synthesizing these findings, we propose the *Social Comparison and Social Support in Online Support Groups* model (Figure 1) to illustrate interactions between social support and comparison processes *within* online support groups. That is, this model does not address comparison experienced prior to joining groups, but rather illustrates how similarity (particularly regarding the attributes identified in our findings) informs support seeking and social comparison, as well as how outcomes and affective consequences of comparison may facilitate or interrupt outcomes of social support (e.g., appraisal, validation, self-esteem; [28,47]). This model is preliminary and can likely be refined and evaluated through further qualitative and quantitative inquiry and application to additional online health support contexts.

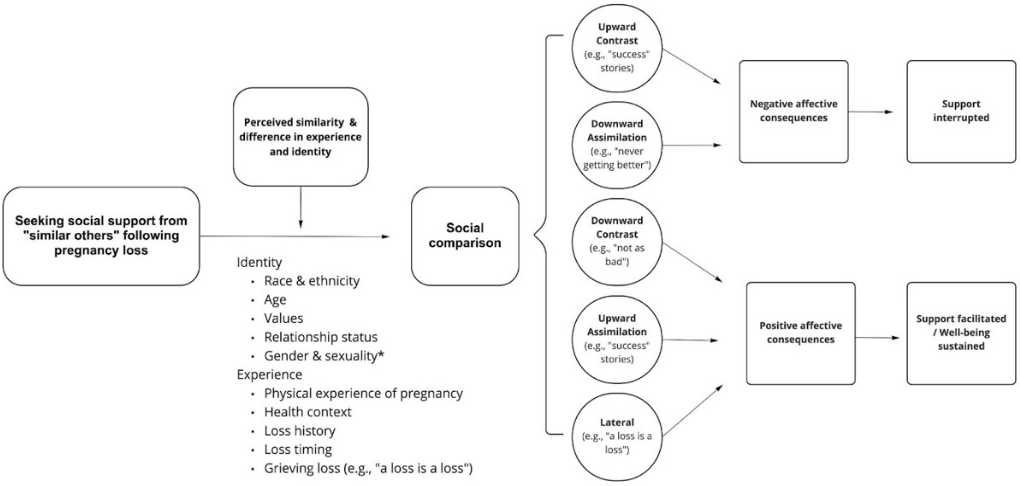

Fig. 1. The Social Comparison and Social Support in Online Support Groups Model: Flowchart depicts interactions between social support and social comparison processes, as experienced within pregnancy loss online support groups. Identity and experience attributes desired or appreciated in similar, supportive others (i.e., race/ethnicity, age, values, relationship status, physical experiences of pregnancy, health context, loss history and timing, and grieving, derived from our findings; gender and sexuality as derived from prior work [7,72]) also inform comparison directions and outcomes. Attributes may also contribute to perceptions of difference, as in contrast outcomes. Negative affective consequences of comparison interrupt support, while positive affective consequences facilitate support and potentially contribute to well-being.

5.1.2 Similarity in social comparison and support online. We surface a set of identity and experience attributes that inform perceptions of similarity (beyond the broad similarity of shared experience); this is significant as similarity is fundamental to both social support groups [43,94] and social comparison [32], as well as affects the type (and potentially quality) of support available from others [42,85,86]. In differentiating between identity and experience attributes, we acknowledge that these factors are not neatly separable—identity factors impact experience through mechanisms including stigma, privilege, and prejudice. Rather, in categorizing these attributes on the basis of identity and experience, we seek to highlight a set of factors that are applicable to experiences beyond pregnancy loss while also noting factors specific to the context of pregnancy loss.

Beyond indicating the salience of values (including religion), race/ethnicity, relationship status, and age as factors affecting perceived similarity, our findings also expand on *why* these factors are impactful in a pregnancy loss context. In one sense, the identity and experience attributes we address affect individuals' assessments of their likelihood of being accepted and understood by group members. Shared values allow for a shared understanding and interpretation of loss (e.g., having a larger meaning or "purpose for the pain," as described by P13), which in turn may facilitate emotional support that affirms one's religious beliefs or world view. Racial and ethnic backgrounds may also indicate particular values or signal cultural competence [15]; influence reactions to grief [77]; and speak to shared understandings of or experiences with medical systems and medical prejudices that intersect with pregnancy, such as obstetric racism [30]. Relationship status may indicate an individuals' support network and/or support needs, as significant others are important sources of emotional and tangible support as well as advocacy in health/illness contexts [29]. These factors inform individual experience and may be applicable to health contexts beyond pregnancy loss. For example, similarity in values or world view may be particularly impactful in bereavement or grief contexts and facilitate comforting, while similar relationship statuses (or other factors indicative of support networks) may aid in providing targeted information or instrumental support (e.g., information about caregiver support, patient advocate resources). In other words, similarity in identity attributes may provide specific inroads for personalized support.

While factors like race/ethnicity, values, and age all inform experience, our findings also surface a set of experience-based attributes[3] that informed perceptions of similarity and difference for participants in this study. Namely, we point to the physical experience of pregnancy, loss timing and history, and health contexts. The physical experience of pregnancy is an intriguing specification as it implies that similarity requires direct experience. This understanding separates those who have physically experienced pregnancy loss from supportive others who have experienced pregnancy loss, such as partners or family members. Such a distinction appears in many peer support contexts, such as Al-Anon for those affected by others' alcoholism [52] and groups for caretakers of people with dementia [39]. This distinction acknowledges that significant others of people who experience stressors (e.g., addiction, pregnancy loss, illness) not only have their own support needs, but that their support needs differ from those of the person they care about [20]. While some participants associated the presence of significant others in online support groups as facilitating perspective and empathy toward their own significant others (e.g., P17), others suggested that the presence of significant others would be unwelcome (e.g., P12); the impact of significant others' presence in pregnancy loss support groups thus warrants further consideration.

In combination, identity and experiential similarity may facilitate connection and significant (as opposed to superficial) identification with others in a way that enables the imagination of possible, alternative selves. In other words, personal (i.e., identity *and* experiential) similarity may be particularly salient to assimilative comparisons, which, as we and others show, can facilitate both positive and negative affective outcomes. In cases where others have successfully navigated similar stressors, these "role models" may provide hope for the future [42,86]. We show how "role modeling" goes beyond broad experiential similarity by illustrating the additional significance of identity similarity (or as P2 said, someone who "looks like me") in online comparison and support.

5.2 Comparison-informed Tensions and Implications for Online Support Groups

Our findings on comparison processes in the context of pregnancy loss online support groups revealed tensions concerning what makes a supportive space and supportive, similar other. These tensions illustrate how social comparison may interrupt social support processes through negative affective outcomes. In considering how social media spaces might address such inherent tensions through design and group organization, we emphasize fostering supportive spaces as an end goal, as opposed to designing for positive affective outcomes of social comparison, as pursuing positive affective outcomes only through design may have unintended consequences

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[3] We reiterate that the distinction between identity and experience attributes is imprecise. We categorize health contexts as experience to capture the ways that temporary and chronic health conditions affect the experiences of pregnancy and loss, broadly. We acknowledge that health conditions also inform identity and could additionally be categorized as such, *and* that not all people living with a health condition view said condition as an identity facet.

[49].[4] We additionally acknowledge that many of the groups discussed here are peer-organized and led; in posing design implications, we direct our suggestions also to organizations that manage social media-based groups and/or applications that support online social spaces and forums (e.g., BabyCenter).

5.2.1 Tension 1: "Magnitude" of Loss. Perceptions that one's loss experience was less significant/valid than another's (upward contrast) or less severe than another's (downward contrast), which speak to the magnitude or intensity of loss, appeared relevant to multiple, contrasting comparison directions. Perceptions of loss magnitude may interrupt access to social support (like P13, who felt her loss wasn't as bad as other women's and thus did not join a support group) or facilitate appraisal (like P15, whose comparisons with others having a hard time helped her to appreciate her mental fortitude). Among participants, perceptions of loss magnitude were often made internally, as opposed to explicitly driven by other group members. Given that such perceptions may inform decisions to not join support groups, the internality of loss magnitude comparisons poses a communication challenge for social media-based support groups—how can groups communicate validation/belonging and interrupt magnitude-focused upward comparisons, before users join?

To address this challenge, publicly visible aspects of groups, such as descriptions, could include statements that explicitly counter this kind of upward contrast comparison and affirm a variety of loss experiences as valid and supported in the group. Within groups, administrators and moderators should be aware—and group policies, development guidelines, and protocols should also reflect—that individuals searching for and joining groups may have concerns about loss validity, magnitude, and belonging. This tension is additionally relevant to contexts beyond loss, perhaps especially cases of trauma, in which a common response is to minimize the severity of one's own experience based on the belief that other people have had worse experiences [84]. Future research could explore the impact of publicly visible messaging such as the ones described here in pre-empting self-invalidation and communicating belonging in contexts including pregnancy loss and trauma.

Tensions around loss magnitude also surface in relation to downward contrast, in which individuals perceive others as "worse off" than themselves. In this study, "worse" referenced experiential attributes, such as loss history, as well as emotional reaction to loss (e.g., going "through the wringer," as P15 noted). While downward contrast sometimes resulted in positive affective consequences and appraisal (e.g., P15 reflecting on mental fortitude), the beneficial effects of downward contrast may be limited; participants found that groups showcasing "competitive grief" or "war stories" without additional supportive interventions were unhelpful, sometimes so much so that they left the groups. Further, some participants, like P13, reflected that they felt uncomfortable accepting support from individuals perceived as worse off than themselves. In these two ways (exposure to negative content without positive coping intervention, discomfort receiving support from "worse off" others), downward contrast may interrupt support, rather than facilitate well-being, *despite* also facilitating short-term positive affective consequences. This tension showcases interactions between comparison and support processes and troubles the association between positive affective comparison outcomes and well-being in social support contexts.

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[4] We make this distinction in acknowledgement of the fact that downward contrast comparisons are often associated with positive affective outcomes yet encouraging downward comparisons (in which one looks to others "worse off" than themselves) may have unintended consequences that are contradictory to social support goals.

5.2.2 Tension 2: "Success" Stories. Our findings suggest that birth announcements and stories about pregnancy after loss may paradoxically provide encouragement and discouragement, through upward assimilation and upward contrast, respectively. Participant experiences reflected that many loss-oriented groups have (implicit or explicit) rules about posting such content, which indicates awareness of the potential for "success" stories to be discouraging and harmful to people grieving pregnancy loss or trying to conceive after loss; research on online infertility support groups similarly reflects the negative impact "success" stories may have on individuals [60]. Despite rules, participants were exposed to "success" stories in loss-adjacent groups, such as those related to infertility. For some, these stories provided valuable encouragement, a "light at the end of the tunnel" (e.g., P13), or an uplifting moment in a space often dominated by pain and grief. As with benevolent envy and inspiration [64,65] as comparison outcomes on social media more broadly, our findings indicate that upward targets *can* offer hope and provide models of possible futures following pregnancy loss. The dialectical outcomes of "success" stories are likely informed by additional factors, such as the amount of time that has passed since a loss occurred [68], that contribute to the individuated nature of loss's impact. The tension surrounding "success" stories is particularly fraught, as some participants who did not wish to see such posts and other potentially upsetting content also acknowledged that sharing success stories or negative experiences might be instrumental to the support needs of *others* in the group.

Against this background, we introduce the *tolerance principle* of online health support groups to describe the phenomenon of tolerating individual discomfort and potential negative affective consequences from exposure to undesired content in online health support groups due to the belief that others find it supportive. Previous work notes negative affective responses to others' upsetting health news (e.g., a disappointing prognosis) as a disempowering aspect of online health-based support groups [46,59], as well as acknowledges online groups as valuable venues for venting about and processing close others' (e.g., friends' or others who are *not* in the group) pregnancy and birth announcements [80]. The tolerance principle extends these works to consider the management of negative affective responses to others' *positive* health news (e.g., pregnancy announcement) encountered in (as opposed to outside of) a group that is required to maintain a supportive environment. In other words, the tolerance principle describes managing one's own emotional discomfort through empathic understanding of others' support needs and may aid in explaining why individuals remain in support groups despite disempowering or negative aspects. This principle highlights the tension between individual and group member needs and underscores the need for design features that aid in respecting conflicting and valid individual preferences. Selective filtering, for example, might be employed to allow individuals to enable or disable the visibility of content tagged with certain keywords or hashtags, such as #rainbowbaby.[5] A similar tension may be relevant in other health support contexts, in which posts announcing treatment completion or remission may similarly contribute to feelings of encouragement and discouragement among support group members.

5.2.3 Tension 3: Similarity and Difference. As discussed in section 5.1, participants noted experience and identity-related attributes they found impactful to or sought out in their experiences in loss support and related (e.g., infertility) groups. Broadly, these factors impacted participants' perceived abilities to feel heard, seen, and understood in groups as well as meet social support needs. Several participants additionally shared the sentiment "a loss is a loss," and felt that they benefited from encountering others with different identities and experiences, but who shared the critical dimension of also having experienced pregnancy loss.

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[5] "Rainbow baby" refers to a baby born after a pregnancy loss or neonatal death [21]

As with “success” stories (Tension 2), we assert that preferences for the in/visibility of certain attributes within groups should be under the control of individual group members. Selective filtering might be leveraged within groups to seek content that references particular experiences and/or identities, hide content that references undesired attributes, or otherwise facilitate connections between individuals with certain shared characteristics. Where supported by platforms, support groups might also pursue subforum organization, in which a “main” forum provides a common, public meeting space and subforums aid in segmenting an otherwise broad and diverse group according to user preferences. Doing so potentially preserves a space in which members may encounter experiences different from their own while also holding spaces for connecting with deeply similar others along dimensions that matter to them. Additionally, as Hartzler et al. [41] argue, user profiles may be leveraged to facilitate identifying and connecting with experientially similar others; indeed, drawing on profile information as a means of assessing similarity and difference is likely relevant (as [41] show in their exploration of cancer communities) in other health contexts. In social media-based groups, leveraging profiles may require the creation of a group-specific profile or “about me” space, to facilitate separation of networks (i.e., between support connections and networks of friends, family, and professional contacts, as separation may be instrumental in managing disclosure, and associated risks, of pregnancy loss), retain privacy, and prevent context collapse with one’s broader social media network(s) [61]. Design directions such as matching functions to connect peers along desired dimensions of similarity appear in other work on support and pregnancy loss, such as Not Alone [8]; our findings extend this work and provide empirical evidence as to exactly which identity and experience attributes may be salient in facilitating perceptions of homophily and for design interventions to support.

In designing to support connection based on preference and targeted similarity, however, we emphasize that supportive spaces for identities and experiences related to minoritized social positions (e.g., LGBTQ+ people who have experienced pregnancy loss) must be equitably fostered. This is key, as support groups are not always equally supportive to all with diverse identities [7]. One mechanism through which groups could support a range of experiences and identities is through algorithmic recommendations. Within groups, algorithms and search functions could draw on user profile information, filter settings, and post history to form recommendations for content and potential connections on the basis of similarity and user preferences (e.g., if users express interest in seeing content from others of the same age). Another mechanism is the development, dissemination, and availability of informational resources. While information is only one form of social support, informative resources that increase the visibility of diverse pregnancy loss experiences may contribute to reducing self- and social stigmatization of pregnancy loss (as suggested in section 4.5.3). Allowing group members to contribute to resources, such as through sharing their personal experiences, could additionally aid in destigmatizing social aspects of pregnancy loss (e.g., impact to relationships, emotional responses) and enable group members to asynchronously support each other through sharing their stories. Further, encouraging targeted (e.g., on specific experiences) contributions from members may aid in sustaining support groups [50].

Indeed, our findings raise questions about the reciprocability of social support in pregnancy loss support groups. That is, many participants expressed wanting to support others (in accordance with the helper therapy principle; [76,81]), yet some participants expressed discomfort at receiving support from individuals they perceived as worse off than themselves. Given that comparison target location is relative and individually determined, how individuals feel they are supported by and can support others (as well as who they can support) in the group is difficult to address through design. Fostering additional avenues for supporting others, such as resource development, may aid in managing interpersonal discomfort while allowing members to still support each other.

6 CONCLUSION

Drawing on in-depth interviews with 18 U.S.-based individuals who had experienced pregnancy loss, we explore social comparison within social media-based support groups for pregnancy loss. While prior work and popular discourse largely emphasize the negative affective consequences of online social comparison and the positive affective consequences of online social support, our findings suggest that (1) comparison can also lead to positive affective outcomes and (2) online support spaces do not always facilitate positive affective outcomes.

As similarity underlies both social support and comparison processes, we attend to perceptions of similarity and associated outcomes of comparison. We identify a set of identity and experience attributes that inform perceived similarity within online pregnancy loss support groups. Findings contribute nuance to what constitutes “similar others” in social support and comparison contexts. In addition, we identify instances in which social comparison may interrupt social support attained through group membership and participation. Specifically, we point to perceived magnitude of loss, “success” stories, and attitudes toward similarity and difference as tensions that facilitated opposing affective outcomes and reflect on how conflicting perspectives on these tensions might be addressed through design. We introduce the *Social Comparison and Social Support in Online Support Groups Model,* a preliminary model that describes the relationships between social comparison and support outcomes in support groups. Future work may draw on this model to explore identity and experiential similarity and associated tensions in contexts beyond pregnancy loss.

We also introduce the *tolerance principle* of online health support groups to describe the phenomenon of tolerating individual discomfort and potential negative affective consequences from exposure to undesired content due to the belief that others find it supportive or helpful. This principle further underscores the need for design features that aid in respecting conflicting individual preferences in online support groups and may be used to further theorize negative experiences within support groups. Taken together, this work provides novel insights into how social comparison and social support processes interact in online support groups.

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