

“So Close, yet So Far”: Exploring Sexual-minority Women’s Relationship-building via Online Dating in China

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ABSTRACT

Sexual-minority women (SMWs) in China are often subject to strong stigmatization and tend to have limited opportunities to connect with other SMWs in offline contexts. Although dating apps help them connect and seek social support, little is known about SMWs’ practices of self-disclosure and connection-building through those apps. To address this gap, we interviewed 43 SMW dating-app users in China. We found that these SMWs developed distinctive self-disclosure strategies, such as posting non-facial photos and implicitly disclosing their whereabouts by blending location information into photos that only those in the know could understand, to avoid interference from aggressive acquaintances and other risks of unintentional disclosure of their SMW identities. Moreover, they used dating apps not only to recognize other SMWs offline and build relationships with them, but to exchange emotional support in the process of SMW identity development. Our findings have design implications for supporting SMWs and improving their online dating experiences.

CCS CONCEPTS

• Human-centered computing → Empirical studies in HCI.

KEYWORDS

Sexual-minority Women; Relationship Building; Online Dating

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1 INTRODUCTION

Over the past decade, lesbian, gay, bisexual, and transgender (LGBT) populations received increasing public attention, and strove for improvement of their social acceptance, access to healthcare, and economic empowerment [60]. Nevertheless, these populations still face challenges ranging from unequal treatment in employment and housing to denial of legal rights and violence [11, 22]. In some Asian countries, due to traditional cultures, religions, and lack of legal protections, social discrimination against and marginalization of LGBT people is deep-rooted and prevalent [2, 44, 59]. In China in particular, sexual-minority women (SMWs)¹ are faced with the twin challenge of high vulnerability and low visibility: that is, they struggle for recognition within LGBT movements [17], while enduring widespread social prejudice [72, 73] and lack of public attention [17, 37]. Unsurprisingly, in these circumstances, many SMWs in China feel isolated [18], depressed [45], and stressed about their sexual orientations [52, 64].

Dating apps can serve as an important space in which they can disclose their sexual orientations [64], develop and experiment with their identities [29], and find community-based support [48], while also socializing with other app users not only in online contexts but also offline [29, 64]. In Mainland China, dating apps exclusively for the SMW population (e.g., Rela, LesPark, LesDo)² have become important platforms for SMWs in search of community and relationships, in part because doing so is very difficult in offline contexts [18, 52]. However, when using such dating apps, SMWs in China are often faced with a dilemma: their need to connect with others requires them to reveal both their sexual orientations and their offline social identities [64], and thus conflicts with their need to cope with aggressive interference and risks of unintentional disclosure [52, 64].

Prior work on dating apps that has mainly focused on LGBT communities in Western contexts has explored self-disclosure techniques and concerns, and showed that online dating is an important pathway to LGBT relationship-building [7, 26] and identity developments [25, 29]. However, relatively few prior studies have investigated how stigmatized populations use such platforms, particularly

¹We borrow this term from National LGBT Health Education Center[13] - “Sexual minority women (SMW) describes the broad group of women who identify as lesbian, bisexual, queer, questioning, and other non-heterosexual identities, as well as women who have same-gender partners but identify as straight.”

²Rela: www.rela.me; LesPark: www.lespark.cn; LesDo: www.lesdo.cn

for relationship-building, in markedly different cultural contexts – including Chinese culture that tends to value stereotypical family roles and thus intensifies users’ concerns about unintentional disclosure of one’s homosexuality [44, 52, 66].

As such, the main goal of this study is to understand what should be counted as essential to SMWs safe disclosure of their sexual orientations and building of social relationships in Mainland Chinese online environments. To that end, we conducted semi-structured interviews with 43 self-identified SMW interviewees in China who had used or were still using SMW-specific dating apps. We did not limit ourselves to users of specific apps, but in the event, our participants used only three: Rela, LesDo, and LesPark. To explore their strategies for and concerns about using these dating apps, our interview questions focused on factors that encouraged the interviewees to use such apps, or discouraged them from doing so; their practices of and concerns about online self-disclosure; and how they engaged in relationship-building in or through the apps.

Our findings indicate that these dating apps provide an important space in which Chinese women can disclose their lesbianism or bisexuality. In addition to this purpose, and of course their central purpose of connecting with other SMWs, the apps are used for exchanging emotional support as part of a wider process of identity development. Our interviewees deployed implicit ways of disclosing their identities and locations, while striving to avoid family interference and protecting the outwardly heterosexual appearance of their daily lives. Additionally, they used the dating apps in novel ways: for instance, to help them identify whether someone they had met offline was also an SMW. Finally, we discuss ways in which the focal SMW dating apps are considered insufficient both for relationship development and privacy protection by SMWs in China, and offer design insights on how to improve them.

This paper’s main contributions are as follows. First, it unpacks stigmatized Chinese SMW dating-app users’ self-disclosure decisions, and in particular, how such decisions are shaped by the desire to connect to similar people, and by a cultural context featuring aggressive family interference and related risks of unintentional disclosure. Second, it reveals distinctive ways in which stigmatized Chinese SMW users use these apps to build offline relationships, exchange emotional support, and develop their identities. Lastly, its findings provide insights for designing safer spaces for stigmatized users’ networking.

2 RELATED WORK

2.1 LGBT People’s Challenges in China

Recent decades have been marked by progress in social acceptance and policy support for LGBT people [60, 68]. This is especially true in Western countries, notably the US and UK [60]. However, challenges to the mental and economic wellbeing of LGBT people still persist, especially for those living in rural areas [22, 35, 36]. LGBT population living in China and some other Asian countries are no exception to this challenge [54, 68]. Moreover, LGBT people in China encounter distinctive sets of challenges, such as stigmatization that stems from Asian culture and aggressive family interference [2, 44, 74].

LGBT people in China tend to be isolated, both publicly and privately [10, 52, 72, 73]. And, as in many other Asian countries (e.g.,

South Korea, Japan, Indonesia, Malaysia, Vietnam, and the Philippines) [44, 74], the law in China remains largely silent on the topic of SMWs’ rights [6]. Though homosexual acts were officially decriminalized in 1997 [10, 73], China’s government maintains a Three No’s policy on homosexuality: “*No approval, no disapproval, and no promotion*” [6]. In practice, this means that same-sex marriage, adoption by same-sex couples, and commercial surrogacy do not and are not expected to receive government endorsement [58, 72].

The situation is made more difficult by the fact that Chinese values strongly emphasize social harmony [42, 44, 66]. In this context, the goals of the individual tend to be viewed as subordinate to those of the social group, and most group members are expected to play a stereotypical role of a social group member [66]. The other side of this coin is that membership of a social group labeled as causing disharmony might cast a negative light on one’s entire social group [9, 66]. Thus, coming out to one’s social circle may represent a violation of social norms [44, 58], and many people would feel strong obligations to seek information about, judge, and intervene in the affairs of LGBT others as a means of maintaining in-group harmony [1, 16, 39]. This emphasis on maintaining harmony reinforces social stigma against LGBT people in China and has major negative impacts on their private lives, including strong feelings of pressure to comply with heterosexual norms [58]. Therefore, they tend to conceal their sexual orientations [58, 72] and even enact heterosexual behavior within their social circles [18, 52].

Family pressure is widely viewed as Chinese SMWs’ most pervasive and intense issue [38, 39, 56]. A United Nations Development Program survey published in 2016 reported that no more than 15% of China’s LGBT individuals had disclosed their sexual identity to their families [56]. This family pressure appears to be intertwined with the high value Chinese culture places on maintaining family harmony by fulfilling the filial responsibility to raise offspring [58, 73]. China’s one-child policy, which operated from 1980 until 2015, would have arguably intensified existing pressures, insofar as many SMWs are the lone child in their families, and perceived by their parents as the only hope for continuing the family line [10, 38]. Thus, some SMWs marry other LGBT people of the opposite sex, a phenomenon known as *formality marriage*, and have offspring in these marriages to maintain “harmony”, if only superficially [47, 58]. Additionally, some families compel their SMW members to undergo conversion therapy: treatment, conducted by unlicensed providers, that aims to change a person’s sexual orientation by means of hypnosis, drugs, acupuncture and electric shock [1, 65].

As a result of their public and private isolation, SMWs in China are disproportionately prone to mental-health issues [18, 45]. Moreover, it is not easy for them to obtain appropriate support, since China’s provision of medical assistance tailored to the LGBT community – to the extent it acknowledges that community at all – is focused on HIV/AIDS prevention for gay men [17, 37].

2.2 LGBT People on Social Media

A large body of HCI and CSCW research has shown that social media play an important role in stigmatized populations’ exchange of information and social support [4, 29, 32, 61]. This is no less true for LGBT users. For example, Haimson et al. [32] found that

support gained through their Facebook networks helped mitigate transgender users' transition-related stress. Prior research has also shown that LGBT people use social-media platforms to construct their identities by observing other LGBT users' practices and socializing with them [29, 35, 50]; to explore and experiment with self-disclosure as their identity evolves over time [29, 54]; and to engage in teaching others about their identity [29].

2.2.1 LGBT Identity Development on Social Media. Social media can serve as a safe space for LGBT youths to explore their sexual identities and genders [50]. Prior research has indicated that LGBT users' sexual-identity development is facilitated by participating in, communicating on, and learning from social media [29, 50]. For instance, Fox et al. [29] found that social media played an important role for LGBT users as a place to learn general LGBT-related information and about the behaviors and experiences of other LGBT users, as well as to experiment with and explore their emerging identities. LGBT individuals' identity development generally involves different stages in which they have to consciously navigate the emergence and disclosure of their identity [29, 67]. These stages consist of seeking information pertinent to their personal confusion/concern about heterosexual identity; accepting their identity; beginning to seek social support from others who share a similar identity; and finally, embracing their identity to the point that they are willing to come out [29, 67].

2.2.2 LGBT People's Self-disclosure on Social Media. Although self-disclosure is crucial to developing one's LGBT identity, gaining support, and building truthful connections with others [57], self-disclosure decisions are shaped by a process of weighing benefits against risks [23, 54]: for instance, positives such as gaining emotional and informational support [23, 54] must be balanced against negatives including rejection, discrimination, and stigmatization [23, 54, 57]. Prior studies have investigated LGBT social-media users' strategic self-disclosure [23, 30, 54]. To avoid risks of disclosing their stigmatizing identities, LGBT users may choose to keep silent on LGBT-related matters [30], modify content that presents their prior identity [33], maintain multiple accounts on the same platform [12], use implicit cues (e.g., sharing LGBT-related political articles, displaying the rainbow flag in profile photos) to disclose LGBT identity [12], and partition their networks in the hope of disclosing their stigmatized identity more safely [33, 54]. Based on such findings, researchers have made design recommendations for people to have more control over the information that they disclose on social media, such as by controlling the visibility of individual posts and "likes" [8] and improving pseudonymity to make people feel safer when disclosing stigmatized identities or experiences [5, 34].

Despite the adoption of some such technological recommendations, recent studies have shown that SMWs in China still face various obstacles to the development of their sexual identities and receipt of social support on social media [53, 64]. For example, middle-aged SMWs in China tend to hide their sexuality, keep a low profile, and express little emotion on social media [64]. These previous studies inspired us to focus on acquiring a better understanding of how members of China's SMW population develop and disclose their identities when seeking relationships, friendships, and support.

2.3 Dating Apps for LGBT People

Alongside social media, dating apps serve as an important method for LGBT people to learn about and build relationships with similar others [29]. In China, LGBT dating apps proliferated after the release of dating apps aimed at men seeking men, such as redd in 2012 and ZANK in 2013 [71]. Lesbian dating apps including Rela, LesPark, and LesDo also emerged beginning in 2012 and have gained in popularity since [63]. Although these popular and highly visible sites/apps may be subject to censorship and regulation, the online space has developed rapidly as one in which LGBT people can interact relatively freely, at least as compared to on more public media and in offline spaces [71].

In contrast to some Western equivalents such as Grindr and Jack'd, which mainly focus on location-based browsing and swipe functionality to help users discover and develop relationships with others in their physical vicinity [71], LGBT dating apps in China are multipurpose platforms that also provide networking and social-support functionality [15, 51, 64, 71]. For example, users of the gay dating app redd can interact with others through live streaming, shop online for LGBT products, seek support for having children via overseas surrogacy, and obtain help with HIV/AIDS prevention [71]. On SMW dating apps such as Rela and Butterfly, users can participate in chat spaces and discussion forums on a wide range of topics, from SMW-related issues to hobbies and married life [15, 64].

Regarding the use of dating apps, previous studies have indicated that Western LGBT people use some dating apps not only for relationship-building [7, 46], but also for exploring and experimenting with their LGBT identities via interaction with other nearby LGBT users [29]. Likewise, in the Chinese case, Miao et al. [51] suggested that redd's social functions – including talking to other gay users who lived far away, and becoming integrated into the online gay community as a live streamer – went well beyond helping users to find romantic relationships or sexual encounters. Wu et al. [75] found that dating apps' users engaged in conversations on a variety of topics to find people with whom they shared common interests or experiences and whom they felt comfortable with. Similarly, Tang [64] found that SMWs in heterosexual marriages disclosed their struggles and discontent in discussion forums on a dating app, as a means of seeking mutual support. Wang [70], meanwhile, found that the audiences for live streaming on gay dating apps were comfortable with online gifting as a means of obtaining online homosexual companionship that was not available in their offline, overtly heterosexual lives.

2.3.1 Challenges of Using LGBT Dating Apps. Although dating apps may help LGBT people build relationships [7, 15, 75], their LGBT users appear to be plagued by concerns about privacy because online dating profiles contain more sensitive information (e.g., sexual orientation and religion) than profiles on typical social-media platforms do [19], and this information could leak into public spaces [14, 43, 64]. For example, Lauckner et al. [43] identified risks associated with using dating apps, such as scams, catfishing, and harassment from strangers. Prior studies [24–28] also indicated that many SMWs use both the popular dating app Tinder and social media, resulting in infiltration and harassment from outsiders. Duguay et al. [27] reported that catfishing and predatory accounts on the

dating app make online dating risky, making SMW users spend substantial amounts of time scrutinizing profiles. In China, the specific social and cultural circumstances discussed above would intensify LGBT dating app users' concerns about unanticipated disclosures of their sexuality [14, 64]. As a result of workplace discrimination on the basis of sexual orientation, for example, SMW users there tend to keep a low profile on SMW dating apps [64].

Such privacy concerns make self-disclosure difficult, despite it being imperative for building relationships. Indeed, previous studies have shown that stigmatized people are faced with tensions between self-presentation and self-disclosure when developing relationships online [7, 14]. For example, Blackwell et al. [7] reported that on Grindr, there was a tension between a wish to boost others' positive perceptions of oneself by revealing more personal information, and a desire to avoid unexpectedly coming out in real life. In line with Goffman's [31] pre-digital theorizations, dating-app users are highly motivated to maintain others' positive impressions of them in offline contexts, and hope to avoid revealing their potentially stigmatizing identity to their offline social circles. In short, if app users want to maintain some level of privacy, they will be at a disadvantage when it comes to meeting others, because many people are relatively uninterested in potential partners who disclose little about themselves [7].

2.3.2 Methods of Alleviating Challenges. Some studies have investigated how dating-app design could be improved to help alleviate both LGBT and non-LGBT users' privacy concerns [21, 49]. For example, Lopes et al. [49] argued that Tinder's matching mechanism probably enhanced privacy, because a user sees ratings from another only when they show mutual interest. Das [21] recommended adding verification criteria based on evaluation of profiles' authenticity, and providing users who earn high "trust scores" with better in-app features.

However, privacy concerns around whether and how to disclose stigmatized identities and experiences remain unresolved. Several studies [7, 25, 41] have explored LGBT daters' self-disclosure strategies, with the aim of resolving such concerns. For example, Duguay [25] found that women carefully balanced their self-presentation of homosexuality against the preservation of identifiable personal information, at least until their matches were confirmed. Blackwell et al. [7] indicated that Grindr users adopted non-facial profile pictures, such as landscapes and blank photos, to prevent them from being identified by known others whom they did not want to interact with on Grindr. And Jones [41] reported that gay male users exchanged photos in private online chatrooms as a way to showcase sincerity while still guarding their privacy.

In China, LGBT dating-app users have tended to be quite rigorous about managing the risks of being recognized offline [51, 64]. For example, Chinese gay male users have been found to prefer communicating with other users who are far away from their location [51]. What's more, since many gay men have been forced into marriages with females who might not be aware of their homosexuality, to avoid being discovered by their wives, they seemed to carefully hide the LGBT dating app by deleting and re-installing it every day [51].

In sum, previous studies suggest that dating apps have the potential to facilitate LGBT users' relationship-building [7, 46] while

also posing certain risks to them, such as unexpectedly coming out [7, 51] and infiltration by non-LGBT individuals [27, 28]. These findings hold true in the Mainland Chinese context [64]. Recently, scholars have focused attention on gay men's perspectives on the use of dating apps [46, 51, 70] and how LGBT users in China use certain features of such apps, such as discussion forums and live streaming [51, 64, 71]. However, we believe that more exploration of the relevant issues will be necessary if safer online spaces for the Chinese LGBT population are to be designed effectively. Thus, the present work explores how SMWs in China make self-disclosure decisions and how they build either online or offline relationships with other SMW users through dating apps.

2.4 Research Questions

As mentioned above, SMWs in China tend to suffer from social isolation, strong heteronormative family pressures, and related risks of unintentional disclosure. However, scholarly knowledge of their practices and concerns around self-disclosure and relationship-building on dating apps remains scant. Moreover, given that sexuality is culturally constructed and should be interpreted in light of specific cultural contexts [2, 44], there is a lack of understanding of SMWs' self-disclosure decisions in Chinese contexts. To address this gap, we conducted an interview study with SMWs living in China. The interview questions were designed to address three main research questions, each of which aims to supplement existing scholarship:

- **RQ1:** What factors (a) encourage SMWs in China to use SMW dating apps, and (b) discourage them from using such apps?
- **RQ2:** What and how do SMWs in China self-disclose on SMW dating apps?
- **RQ3:** How do SMWs in China build relationships using SMW dating apps?

3 METHODS

3.1 Recruitment

Our study recruited interviewees through snowball sampling. In prior research, this method has been effectively deployed to recruit participants from hard-to-reach populations and subgroups [30, 54]. We initially used a few Chinese keywords to search for potential interviewees on Weibo, one of China's most popular social-media platforms; and based on the results, reached out to some individuals who had openly disclosed their SMW identities on their Weibo pages. We then identified several accounts that actively posted new content, and sent private messages inviting those accounts' followers to join an audio-only online meeting. In that meeting, we explained our research goals and how we would protect our participants' identities. Then, all of them were invited to interviews aimed at capturing their experiences. Additionally, we asked this initial group of potential participants for their help with sharing our recruitment materials with other possible interviewees within their online networks. Those materials contained the estimated length of the interview (40 minutes) and a general introduction to our research goals and team. To ensure that we could explore SMW users' common strategies for, and concerns about, using SMW

Age	18-23 (n=32), 24-26 (n=11)
Gender	Female (n=43)
Sexual Orientation	Lesbian (n=24), Bisexual (n=19)
Disclosure Status	Concealed (n=4), Close friends (n=39), Partial Family Members (n=13)
Motivation of Using Dating Apps	Find new friends (n=32), Seek romantic relationships (n=27)

Table 1: Demographic data of interviewees

dating apps in general, we did not limit participation to people who had used certain apps.

Before being interviewed, each participant was required to sign a consent form and answer a preliminary survey (both in Chinese). The consent form reminded each participant that she would remain anonymous and could refuse to answer any questions. The interviewer then informed them verbally of their right to suspend or abandon the interview at any time, and that refusal to answer particular questions would not incur any penalty. The preliminary survey questions were aimed at helping us understand our interviewees’ backgrounds. Specifically, the survey inquired about: 1) self-identification (e.g., gender, sexual orientation); 2) age; 3) occupation; and 4) experience of using SMW dating apps, in terms of usage frequency, perceived benefits, and privacy/safety/other concerns. Based on the interviewees’ survey responses, the questions we asked them in the semi-structured interview were modified to enable us to delve deeper into their experiences.

3.2 Interviewees

Our final pool of participants comprised 43 Chinese SMWs, all of whom were living in China and willing to participate in the individual online audio interviews. The semi-structured interviews explored their motivations, practices, and attitudes connected with dating apps. Each interview lasted 30-60 minutes ($M=35.41$, $SD=10.07$) and was audio-recorded and transcribed for analysis with the interviewee’s permission. Each participant was given compensation of US\$15. The interviews took place from March to June 2021 and were conducted in Chinese, the first language of all participants and three researchers. The study was reviewed and approved by an Institutional Review Board.

As shown in Table 1, the participants all reported their ages as between 18 and 26; the median age was 21. Most ($n=36$) were college students, but five were in employment, and two, unemployed. All self-identified as female, 24 as lesbian (56%), and 19 as bisexual (44%). Here, it should be reiterated that we did not exclude any other subgroups (e.g., transgender women) from the SMW population from participation; however, none responded to our recruitment efforts. Four (9%) of our participants completely concealed their sexual orientation in all their offline social circles. The other 39 (91%) had disclosed their sexual orientation to their closest friends; but just one-third of those 39 ($n=13$) had disclosed it to any family members. As of the dates of their respective interviews, Rela was in use or had previously been in use by 95% of the participants ($n=41$); 11% ($n=5$) were using or had used LesPark; and 5% ($n=2$) had experience of using LesDo. Their reported aggregate app-use

duration varied from two months to five years, and their reported frequency of usage varied from checking the app several times per day to once every other week. In terms of motivations, 32 interviewees (74%) stated that they hoped to find friends via the apps, and 27 (63%), romantic relationships.

3.3 SMW Dating Apps in China

Among the three dating apps used by our interviewees, Rela was the largest Chinese SMW dating app, with more than 12 million registered users as of 2021³, and LesPark, the second largest⁴. Although the popularity of the three focal SMW dating apps differed, their sign-up systems and main features had much in common. One of the key exceptions was that only Rela provided dedicated chat spaces in which its users could discuss SMW-related issues. All three apps incorporated a “Search nearby” feature (Fig. 1), recommendations of posts from other users, live streaming, and user-controlled sharing of life moments through the posting of text, still images, and videos.

Only SMWs who were over 18 years old were allowed to sign up to the apps, and they were also required to link their accounts to valid cell-phone numbers or other social-media accounts such as WeChat or QQ. After the signup procedure was complete, they had the option to fill in a personal profile with their age, sexual orientation, T/P/H identity⁵, job, current location, date of birth, and relationship status. However, users who chose to leave their own profiles empty could still use the dating apps to check others’ profiles.

“Search nearby” was one of the most commonly used and arguably the most important feature of all three dating apps. When users viewed profiles from a list of nearby users, they could choose whether to open them according to two pieces of information, 1) their profile photos and 2) GPS-based phone-to-phone distance. If they were still interested after reading someone’s full profile, they could “follow” that user and initiate a chat with her. Specifically, on Rela, users could “wink” at another user to show interest (and those who receive “winks” can “wink” back). Also, if there are relatively few nearby users, more distant ones can be added to these lists. On Rela, a paid subscription to “Premium” allowed users to change location to meet people in other cities, i.e., to view users in those cities as though they were there themselves; and set more filters (e.g., include only profiles with photos). Importantly, Rela users who did not subscribe to “Premium” could not prevent themselves appearing in other users’ nearby-user searches. Non-premium users were also disallowed from using other privacy settings: for example, anonymously browsing others’ profiles, and secretly “following” them.

³Rela: <https://apps.apple.com/us/app/the-l-formely-rela/id1086944243>, LesPark: <https://apps.apple.com/no/app/lespark-lesbian-bi-social-app/id132984336>, LesDo: <https://www.techinasia.com/china-lesbian-dating-app-lesdo>

⁴In October, 2021, LesDo announced its shutdown without disclosing a reason.

⁵“T” comes from the English word “tomboy” and corresponds to the US term “butch”; “P”, from the Chinese word for wife, “po”, corresponds to “femme”; and “H”, for “half”, refers to a person who engages in both roles.

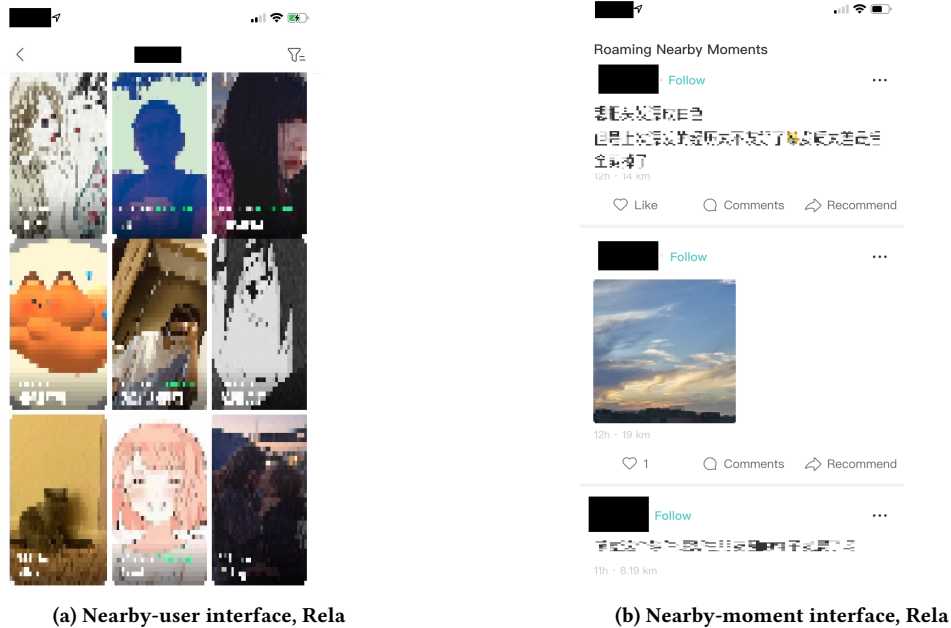


Figure 1: User interfaces for the “Search nearby” function on Rela

3.4 Interview Protocol

As noted above, all the interviews were conducted in Chinese. Each interview began with the researcher introducing herself and engaging in small talk to build trust and facilitate conversations. Then, she asked questions about the interviewees’ experiences as SMWs in China: for example, “Have you disclosed your sexual orientation to family, classmates, friends, or coworkers? If so, to whom?”, “Do you have any SMW friends offline? If so, how did you get to know each other?”, and (only if they felt comfortable sharing their experience) “Have you ever experienced discrimination against your sexual orientation in your offline social circle?”. They were then asked them about their use of the dating apps, such as “Why did you start to use SMW dating apps?”, and how long they had been using them. Then, they were asked “How do you usually use the dating app(s)?”, and “What are the app functions that you spend most time on?”. The interviewer also asked for more details about how they shared information on their in-app personal profiles; how they interacted with others on the apps; the difficulties they encountered with the apps; and concerns that arose from using them.

To help us understand the relationships between the interviewees’ concerns and their disclosure practices, we asked them to identify their intended and unintended audiences, as well as disclosure strategies aimed at coping with these respective audiences. We also asked them to share their successes and failures when trying to build relationships using the dating apps. Specifically, we asked them to describe the processes whereby they built online and offline relationships on varied applications. The interviewees who said they had established relationships successfully were then asked to share the important factors that contributed to that success; and those who said they had been unable to build relationships were asked to identify the issues that had prevented this. Lastly, we asked

the interviewees to share any other experiences they thought were relevant.

3.5 Ethical and Privacy Considerations

Because the interviews by their nature evoked potentially sensitive information, such as experience of being discriminated against or sexually harassed, the interviewees were reminded at the beginning of each interview that they could skip any questions they did not feel comfortable answering. If they still mentioned traumatic experiences, at emotionally charged points, we would suggest that they might like to pause the interview or skip to the next question. Each participant was assigned with a randomized ID in place of her name/nickname. The interviewers carefully reviewed each recording right after the interview, and removed any identifiable content from the data prior to further analysis.

3.6 Data Analysis

Before conducting the interviews, we conducted a quantitative preliminary survey to help us better understand our participants’ demographic backgrounds and prior experiences of using dating apps. We analyzed the survey results by calculating the proportions of interviewees who claimed to belong to certain groups, identities, and options.

All interview recordings were transcribed, and we used thematic-analysis procedures to categorize each response according to the questions’ themes [69]. Initially, two researchers identified codes and themes from the first six interviews, and then iteratively reviewed and labeled the responses with emerging codes. If a response corresponded to multiple codes and themes, it was divided into multiple parts so that each part could be labeled with a single

code/theme. Next, using the initial codes, two raters independently coded all the remaining responses.

The same pair of researchers then compared their coding results, with the aim of identifying any disagreements, and discussed possible revisions, including whether it was appropriate to merge certain codes or to add new ones. When the coding scheme changed, each rater re-evaluated and re-labeled the responses. This cycle was then repeated until the coding scheme was deemed satisfactory by both raters, and inter-rater reliability had reached a reasonable level (>92%).

3.7 Limitations

Our study has several limitations that should be acknowledged. First, because of our sample’s demographics, the findings may not be generalizable to SMWs younger than 18 (despite some of our interviewees noting that they had started using the focal apps below that age) or older than 26, or in places other than China. Results from other age groups and other conservative cultures will therefore be essential to confirming the findings of this study and building on them, not least when it comes to designing or re-designing SMW dating apps to be suitable to their users’ various identity-development needs at different life stages. Second, the individuals in our sample stated that they are either lesbian or bisexual women, despite the keywords we used to search for potential interviewees not excluding any SMW subgroups. This might be due to the fact that the question in preliminary survey conflated concepts such as male, female, and transgender, preventing transgender individuals from being able to properly declare their sexual identity. Future research should therefore be sure to include transgender women, who experience even stronger stigmatization and might therefore deploy more complex self-disclosure practices, although such future research would undoubtedly be challenging [34, 62]. Also, to allow our interviewees to share their experiences freely while maintaining their safety, we did not ask them to verify their identities on the SMW dating apps. This might have affected the interviews’ authenticity, though we hope that our use of the snowball sampling method mitigate this concern. To further mitigate it, future researchers on this topic should consider collaborating with relevant LGBT organizations. Lastly, most of our interviewees were familiar with Rela but had little experience of using other dating apps. Therefore, our study may have overlooked key aspects of SMWs’ usage of other platforms. Nevertheless, we believe our findings provide useful insights into how non-Western LGBT populations use dating apps to build online and offline relationships.

4 RESULTS

This section begins by presenting the factors we identified as encouraging or discouraging our interviewees’ use of SMW dating apps (RQ1). It then describes their practices of and attitudes about disclosure, and their concerns affecting their disclosure decision-making (RQ2). Finally, it explores how they attempted to build connections with other SMWs on these apps, and why such attempts succeeded or failed (RQ3).

4.1 Factors Encouraging/Discouraging the Use of Dating Apps (RQ1)

4.1.1 Advantages of Using Dating Apps.

1. Finding Spaces to Disclose and Discuss Sexual Orientation. Nine interviewees stated that finding online spaces to disclose and discuss their sexual orientations was an important factor motivating them to use SMW-focused dating apps. They mentioned that disclosing their sexual orientation could help them feel less stressed about it. S45 stated: *“Disclosing my sexual orientation to other lesbians on the app makes me feel more comfortable. All the pressure I feel due to being a lesbian goes away when I talk about lesbian-related stuff with others.”*

All of these nine interviewees noted that, because they concealed their sexual orientations from their families and friends to avoid discrimination, felt completely unable to disclose them on general social-media platforms such as Weibo and Wechat, where they were followed by people they knew (e.g., S20). These interviewees further explained that they concealed their sexual orientations – on social-media platforms as elsewhere – due to indirect discrimination from parents, classmates, or co-workers. As S12 explained, *“Once I watched a movie with my roommates and there were LGBT characters in it. They said LGBT people are disgusting and mentally ill. I was shocked and disappointed.”*

Censorship of LGBT content on social media was another factor that led to a lack of space for disclosing SMWs’ sexual orientations. S12 noted a trend toward harsher censorship that was making popular social-media platforms increasingly unsuitable for disclosing and discussing SMW identity: *“In recent years, more and more LGBT-related tags, posts and discussions have been banned on Bilibili and Weibo, so it is hard to find a good online space.”*

2. Seeking Emotional Support. Eight participants (i.e., five of the same nine as above, and three others) stated that they were motivated to use dating apps by a wish to obtain emotional support from other SMWs, to feel that they were not alone, and to become more accepting of their own sexual orientations. The same eight participants expected the online dating community to be a safe, SMW-specific space where they could seek emotional support from similar others. For example, they hoped to receive positive feedback on presentations of their T/P/H identities, and to engage in communication with other SMWs who had similar experiences and feelings. As S43 noted: *“When I first realized that I liked girls, I started to use the dating app just because I didn’t want to feel lonely. I wanted to find a community and better identify with myself.”*

3. Developing Social Relationships with Other SMWs. Citing widespread discrimination, most of our interviewees said that they had limited social circles. Moreover, due to the small sizes of these circles, they had limited opportunities to develop relationships with other SMWs. Among the 35 participants who cited developing intimate relationships with other SMWs as a major motivation for using dating apps, most (n=23) indicated that it had been difficult to develop such relationships in daily life. S16, for instance, said: *“I didn’t know any lesbians at school and hoped to find friends on the dating app.”* Some of this group (n=7) also mentioned that they found it difficult to identify people’s sexual orientations in offline contexts. As S32 put it, *“It’s never easy to identify whether a girl is*

straight or not in real life. You can guess, of course, but you might be wrong.”

4.1.2 Disadvantages of Using Dating Apps.

1. Risks that Do Not Match the Expected Benefits. Six interviewees indicated that the risks of using dating apps outweighed their benefits. That is, when they disclosed enough information about themselves to appeal to other users, the risks of being outed became too high. Thus, most of them failed to establish meaningful relationships on the dating apps. Sometimes, however, even levels of self-disclosure that were deemed risky had no positive effects, as S9 explained: *“When I started to use the apps, I often posted things like what I did or how I felt. I disclosed a great deal of information and even risked outing myself, but I got nothing.”*

The risks of using the “Search nearby” function to build either intimate relationships or friendships were cited by 40 interviewees, who said they always worried about being recognized and outed by heterosexual males or females from their local social circles. Hence, they tended not to disclose any information that could be linked to their offline social identities, which made online interaction with nearby SMWs harder. As S30 put it: *“I live in a small town where everyone knows each other. One day, I posted photos of myself on the dating app. Next day, my classmate came up to me and said he saw me as a nearby user on an SMW dating app. I was afraid that he would tell my parents about this, so I quickly deleted my account.”*

Five interviewees stated that they were worried about being harassed offline by non-LGBT strangers who were using the apps through fake accounts. In particular, they had encountered male strangers who hoped to satisfy their curiosity about SMWs and/or wanted to have casual sex with them. These interviewees further expressed a fear that non-LGBT strangers could take advantage of knowing about their SMW identities to threaten their offline safety. S15 explained: *“They can pretend to be lesbians when talking to me. I’m sure that many of them would stalk me if they could find me in real life. They are curious about lesbians, it’s like we’re animals in a zoo.”* The blame for the problem of fake accounts operated by non-LGBT people was laid at the door of the apps’ sign-up systems, which only asked simple questions – e.g., whether they were SMWs and at least 18 years of age – to validate their users’ SMW identities.

2. Feeling Harassed by Advertisements for Formality Marriages and Surrogacy Services. Nine interviewees mentioned that they felt harassed by various in-app prompts and advertisements that they received in connection with formality marriages and surrogacy services. These interviewees said they were opposed to formality marriage, on the grounds that within such marriages, traditional household inequality still existed, and in turn negatively influenced SMWs’ lives. As S10 stated: *“Even though the marriage is fake, lesbians have to take on more responsibilities, such as raising children. Many gay men even perceive such inequality as normal.”* They said they felt harassed when seeing the advertisements, chiefly due to a combination of official and unofficial discrimination and internalized homophobia. Six interviewees had received such advertisements from personal accounts, and four, from the apps themselves. As S40 noted: *“I was constantly bombarded with advertisements for formality marriage, consisting of gay men posting photos of themselves, with introductions and basic standards for their potential female partners.”* Such phenomena existed on all three dating

apps. Though all the apps offered a “Report” button that, in theory, enabled users to block inappropriate prompts and advertisements, two interviewees claimed that they reported such advertisements, yet continued to receive similar ones. As S27 mentioned: *“It was endless. Sometimes I even wondered if the app tried to recommend more advertisements about formality marriage to me after I reported some.”* Both these participants eventually stopped using the dating apps.

Eight of the same nine participants who felt harassed by advertising matter said they would prefer SMW dating apps not to deliver formality-marriage and surrogacy information, because these activities were not legally endorsed by the government, and/or because they were made uncomfortable by them as expressions of traditional values: i.e., that women should marry and continue their family lineages. They also expressed concerns that their personal information might be shared with third parties offering these services. As S13 said: *“The app claims that it supports lesbian women, but it hurts my feelings. I feel insecure because the app can make profits from selling my information to gay men; it can also sell my information to companies that run surrogacy programs.”*

4.2 Practices of Self-Disclosure (RQ2)

Despite the various disadvantages noted above, many interviewees continued using the apps, on the grounds that they felt a profound need to build social relationships with other SMWs, and believed that explicitly presenting oneself as SMW was an essential step to doing so. A sizeable minority (n=17) disclosed personal information on the SMW dating apps such as T/P/H identity, photos of themselves, and thoughts and feelings about being SMW. They indicated that doing so revealed their serious attitudes toward online dating. Personal information could also help other SMW users to verify the authenticity of their profiles, and thus enhance trust. As S24 put it, *“Real information can let others know you’re serious [about online dating], not just fooling around.”*

However, 31 interviewees reported that they withheld anything that might readily disclose their offline social identities, such as their real names, phone numbers, home addresses or schools, to maintain control over the scope of the audience for their sexual orientation. Without such precautions, they felt that they could not prevent what they shared on SMW dating apps from being circulated to non-LGBT people who know them offline. S30 described the unwanted consequences of being recognized by her coworkers: *“I don’t post anything that can be used to infer my offline identity. I’m afraid that my non-LGBT colleagues may learn my sexual orientation, and that my boss will fire me because of it.”* Therefore, on the SMW dating apps, these interviewees used several strategies for disclosing their information, which we present below.

1. Posting Non-facial Photos for Expressing Seriousness. Personal photos play an important role in dating profiles, but sharing personal photos was thought to be risky by many of our Chinese SMW dating-app users. Photos that did not show their faces were used by 15 interviewees, to protect themselves from being identified by people in offline social circles. Specifically, they covered their faces with their hands, and took photos from behind. For example, S40 said: *“I post photos that show my full body with hands covering*

my face. I think I’m doing the right thing to protect myself from being identified by others at school.” Of the same 15 interviewees, 13 mentioned that, despite not showing their faces, such photos still helped them to indicate their T/P/H identities via styles of dress and postures. They also noted that they felt it necessary to post photos for this purpose even if they had also explicitly stated their T/P/H identities in their profiles’ text. They believed that posting photos that matched their identities helped increase their profiles’ authenticity and express their “seriousness”. As S35 mentioned: “I have stated in my profile that I am a P. But I still post my no-face photos because I want others to trust me and know that I am serious about online dating.”

2. Stating T/P/H Identity for Developing Intimate Relationships. For some SMWs, statements of T/P/H identity were not deemed necessary: notably, if they only hoped to seek online or offline platonic friends. However, for those who were interested in building intimate relationships, it was important to disclose such identities; and 17 of our interviewees explicitly marked them in their dating profiles. Disclosing this information was mainly intended to filter out those other SMW dating-app users who had no interest in developing intimate relationships with someone of a certain such identity. For example, a P might not be interested in developing a romantic relationship with another P, as S25 explained: “Explicitly stating your [T/P/H] identity can let others know if there are any chances of developing relationships. It’s good to save both parties’ time at the beginning.” Another motivation for disclosing such identities was to avoid misunderstandings with other SMW users, arising especially from the widespread use of non-face photos. S43, for instance, reported that she disclosed herself as an H because she was worried about being seen as a P: “I dress and act in a feminine way, but it doesn’t mean that I’m a P. I don’t want to be reached out to by people who perceive me as a P and have no interest in an H.”

3. Sharing Thoughts and Feelings without Disclosing Identifiable Events. The counterpoint to the interviewees’ caution about disclosing personally identifiable information was a widespread preference for disclosure of thoughts and feelings (n=31). Some (n=15) said they shared feelings as a means of seeking emotional support from other SMW app users. For example, they shared feelings of happiness that arose from spending time with their partners, disappointment when witnessing discrimination against LGBT people, and confusion about planning their future paths in life as SMWs. As S33 noted, “I often describe how happy I am when spending time with my girlfriend. I want others to enjoy my happiness too.” Expressing emotions seemed easier than disclosing experiences of specific activities they were involved in, as the former could be unaccompanied by any contextual information, thus allowing these app users to feel that their online disclosure was safer. As S34 put it, “I have a large social circle at school and I’m afraid of being recognized by friends. So I express my thoughts on public [as opposed to personal] issues about LGBT people. It’s safe since I don’t need to provide any details about myself.”

4. Implicitly Disclosing Location for Creating Nearby Connections. As noted earlier, the interviewees tended to withhold information about their offline identities because such information

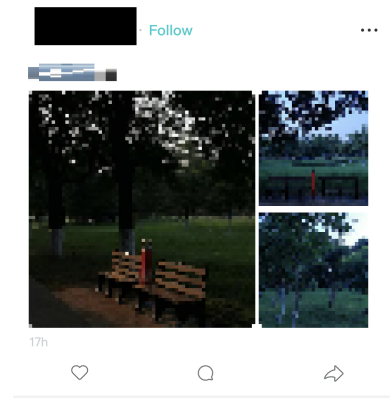


Figure 2: A user’s post that implicitly discloses location with photos

could negatively impact their daily lives. Most (n=35) avoided directly disclosing their locations, such as places of residence, schools, and employers, and some turned off their phones’ GPS location functions (especially because, as noted above, they could not directly disable Rela’s “Search nearby” function without paying extra for Premium service). Although our interviewees could not see nearby users’ profiles after turning off their phones’ GPS, they could still see others’ posts that were recommended to them by the system. Concerns about disclosing their locations appeared to be stronger among those interviewees who were college students, because they lived in dormitories, making it easier for non-LGBT people in the same building to identify them if they posted photos of it. For example, as S41 told us, “Many straight girls in the building know me personally. I don’t know who might deliberately track me and learn my secret.”

However, turning off their phones’ GPS capability did not necessarily mean that they concealed their locations altogether. Indeed, completely concealing their locations would have meant giving up on creating social connections with SMWs nearby. Rather than giving up on their goal of attracting those other users, they came up with subtle ways to reveal their locations. That is, instead of using the “Search nearby” function, some interviewees shared cues such as photos of a corner of a classroom or a lake on their campus, which implied their geographic location while mitigating the risks of it being recognized at a glance (Fig. 2). As S17 explained, “I never tell anyone my school’s location. I only post photos of its scenery. For example, a tree or a part of the building.” Such implicit cues helped them to filter out nearby SMW users who did not belong to a specific social group, e.g., students at the same school. As S40 indicated, “I hope to be friends with someone who’s also a college student in this area. Only those who are studying in my school or nearby schools would be able to recognize the places in my photos.”

4.3 Building Relationships (RQ3)

As we have seen, the interviewees took the risk of disclosing aspects of their identities on dating apps as a means of building relationships with other SMW users. Dating apps, they said, played a particularly important role in initiating social connections with other SMW

users, despite some flawed information and the risks associated with using apps. Below, we present some ways that these SMWs used dating apps to build relationships.

4.3.1 Identifying Other SMWs in Offline Contexts. The interviewees said they used the dating apps not only to meet new people, but also to identify other SMWs who might already be present in their daily lives. The several methods used to achieve this are described in turn below.

1. Using Location Sharing to Check the Sexual Orientations of People Met Offline. Our interviews established that four interviewees had been able to use SMW dating apps' location-sharing functions to identify whether someone else was SMW in an offline context. They explained that, when they found it hard to guess a person's sexual orientation simply by observing her, they would seek confirmation by checking if she appeared as a nearby user. *"In a subway, I noticed a good-looking girl in front of me. But I wasn't sure if she was a lesbian. So I checked dating profiles of nearby users who were within a hundred meters. Eventually, I found she had a profile with a photo that only showed half of her face"* (S45).

2. Using the "Wink" Feature of the Rela App to Identify if Someone Met Offline is SMW. Some interviewees also reported using "wink" feature of the dating app Rela in novel ways to identify if someone they met offline was SMW. For example, S33 used winking as a physical gesture to approach other women in offline contexts: *"One day in a bubble-tea shop, I saw a girl who dressed like a T. To confirm, I winked at her. She immediately got it and winked back at me."* S32, on the other hand, hung a keychain featuring Rela's "wink" icon on her bag, *"to give a little hint and attract more lesbians to meet me in daily life."*

4.3.2 Cultivating Relationships on Dating Apps. For SMWs who decided to cultivate relationships on dating apps, initiating engaging conversations, and transferring those conversations to other platforms and other modes of interaction, were both important. Each of those needs is explored below.

1. Initiating Engaging Conversations. Finding commonalities – e.g., hobbies and interests, locations, and social groups – was deemed key to initiating engaging conversations on the three dating apps, and 16 interviewees said that they had successfully initiated such conversations based on other SMWs' profile information. However, a much larger subgroup of our participants (n=28) reported having trouble finding commonalities due to other app users' limited self-disclosures, which were sometimes of nothing more than their sexual orientations. As S4 noted, *"Finding a partner is not only about finding another lesbian. It's about finding someone who has similar interests and values."*

2. Switching to Other Platforms. Some interviewees (n=18) switched to other social-media platforms such as WeChat and Weibo, commonly used for daily communication with offline social circles, to obtain information about the hobbies and other life circumstances of women they were interested in. As S21 explained, *"It's common to see someone with nothing in her dating profile. But if we have a pleasant conversation, I'll ask to add her as a friend on WeChat. Then I can know more about her from her WeChat profile."* Six interviewees noted that non-dating-specific social-media

profiles helped them to verify whether potential partners' information on the dating apps, such as locations and photos, were accurate/reliable. As S40 commented: *"I can't say that I trust someone if I only see one or two photos in her dating profile. She might have fake photos. If I can see her profile on WeChat, it is possible to know more."*

However, not all the interviewees felt comfortable about switching between platforms in this way. Four indicated that they felt uncomfortable about, or even ashamed by, developing same-sex relationships on social-media platforms that were commonly used in daily life. For them, switching platforms equated to linking other SMWs to their real worlds, and bringing them closer to their social circles. These interviewees explained that they were still struggling with a sense that developing such relationships was incorrect and immoral. All four reported having low self-esteem due to being SMW, and that developing intimacy with other SMWs intensified their guilt. S2 commented: *"It's not okay to add other lesbians on WeChat. I only talk to them when I secretly use the dating apps. I'll say 'this isn't right' to myself when talking to lesbians on the same app on which I communicate with parents and friends."*

3. Meeting in Person. At the time of data collection, only six interviewees had successfully met at least one other SMW app user face to face. Among the great majority who did not achieve this goal, most blamed their own strong concerns about being catfished and outed in offline contexts. They explained that, although they might find more information about a potential date from other platforms, they found it difficult to fully trust anyone based solely on social-media information. As S19 explained, *"Within two days after we became friends on WeChat, she wanted to come to my home. I didn't reply to her after that. I felt unsafe because, in the worst case, she could be my heterosexual classmate. It was impossible to trust her since I couldn't verify her identity: I hadn't seen her photos, nor had I had a voice call with her."*

5 DISCUSSION

This study has extended previous work on LGBT dating apps [7, 27, 28, 51, 64] by exploring how SMWs in China use such apps to build relationships with other SMWs while dealing with the difficult balancing act of guarding their personally identifiable information but at the same time disclosing their interests, values, and sexual identities. We have also explored the self-disclosure and relationship-building strategies Chinese SMWs adopted while dealing with the cultural factor of families' and friends' aggressive anti-LGBT investigation and intervention. Moreover, we found that under the prevailing social stigma against SMWs and strict censorship of LGBT content on popular social-media platforms, SMW dating apps are used not only for dating: i.e., people use them to experiment with their SMW identities, share their intimate feelings as SMWs, and seek SMW friends to discuss SMW-related issues and exchange emotional support with. Our key findings are discussed in turn below.

5.1 Concerns about Using SMW Dating Apps in China

Concerns about Unexpectedly Coming Out. Our interviewees expressed strong concerns that they would unexpectedly be outed

in their offline social circles, because this could negatively impact their lives. Managing their SMW identities and separating them from their offline social circles was made difficult by infiltrators of SMW apps, who – whether deemed malicious or merely curious – were seen as threatening SMW users' privacy and safety. These findings resonate with those of previous studies [7, 23, 51, 54], which suggested LGBT users are concerned about being identified as LGBT to their offline networks. Such concerns seemed to be intensified for our interviewees, especially those living in the Chinese countryside in which people are likely to know each other. As explained earlier, China's LGBT population is likely to be regarded as a failure and/or source of shame by the other social groups that they belong to, with many Chinese finding it hard to accept that anyone in their own social circle self-identifies as LGBT [10, 72]. This makes the potential negative consequences of disclosure of minority sexual orientations acute there [18, 53, 58, 64].

Based on our findings, we urge the managers of LGBT-specific dating apps used in collectivist cultural contexts to pay extra attention to enhance such apps' community-boundary management and community-member vetting practices [28, 34]. Examples of this could include asking for credentials (e.g., questions related to SMW identity, photos, voice messages) when registering, enabling entry by invite only, and using long-term identifiers [34]. It might also be helpful to make privacy settings more user-friendly [21, 34, 35], such as by enabling users to set their profiles as visible to other users only within a certain radius [35], or by setting up "trust scores" by verifying users' profile authenticity [21]. Another implication of our findings is that such apps should give greater prominence to "Report" buttons for bad actors [27]. This is because in many current dating apps, such buttons are hidden behind other icons, which may lead users to think that reporting others is unusual behavior [27].

Opposition to Formality Marriage. Our findings also indicate that our interviewees were often discouraged from using SMW dating apps because they felt harassed by advertisements for formality marriage and surrogacy. This finding has not been discussed much in prior literature about LGBT online dating in China, since many of them focused on the process of developing social relationships on LGBT dating apps [15, 51, 64, 75]. Although one previous study [71] reported that surrogacy consultation and related services were popular on gay-male dating apps in China, our interview results indicate that SMWs held an opposite attitude toward them. This apparent discrepancy could have resulted from 1) formality marriage potentially be deemed more necessary for gay men than for SMWs, because male adults are generally perceived as responsible for having male heirs to carry on the family name [40, 47]; 2) existing gender inequality in Chinese families leading to exploitation of SMWs labor, e.g., as sole caretakers of children [20], to the point that there seems to be no obvious benefits for SMWs to engage in formality marriage, apart from making their parents happy; and 3) SMWs' resistance against being perceived and treated as objects, to fulfill women's reproductive duties as specified by China's patriarchal traditions [17, 37].

Our same findings further suggest that designers of dating apps should pay more attention to advertisements, since certain content may make stigmatized users feel uncomfortable and even trigger

memories of their traumatic experiences of living in socially conservative environments. This chimes with prior literature [24] pointing out that activities on social media are not confined to user-to-user interactions, but also incorporate the practices and influence of other parties, including advertisers, designers, and marketers. Given the technical ease with which dating apps can target their users with information and advertisements specifically designed for the SMW group [71], future designers of such apps and other relevant practitioners should include ways for their users to avoid seeing promotional information that they find disturbing or otherwise unwelcome, even if it is only a very basic reporting/filtering mechanism. For example, dating apps could enable users to selectively view content using content warnings, and/or filter out offensive content with blocklists [34].

5.2 Implicit Cues in SMW Online-dating Apps

To lower the risks of being directly identified as SMW by straight people they knew offline, some of our interviewees chose not to disclose highly identifiable information such as their faces and exact locations, echoing prior studies' findings that gay male dating-app users often posted pictures without faces due to privacy concerns [7, 14, 35]. While gay male users tended to post pictures without faces [7, 14, 35], our interviewees reported unique practices of sharing photos with other implicit cues, such as modes of dress to indicate T/P/H identity, and photos of locations in place of their addresses, institutional names. According to the interviewees, the implicit cues seemed to make their profiles more authentic and thus more attractive to potential SMW dating partners. People's self-disclosure decisions are influenced by their perceptions of potential audiences [30, 31] and affordances of platforms [23, 54]. Specifically, Goffman's impression-management theory [31] holds that every person has a front stage and backstage that align with their real-life self-presentation practices. People carefully control what information they share with others, and what information they share with each of their social circles (i.e., engage in selective disclosure). Our findings build on this framework by showing how stigmatized people in China use subtle ways of self-disclosure to protect their frontstage personalities while meeting their backstage needs. Most of the SMWs in our study not only engaged in selective disclosure, but also disclosed information about themselves using implicit cues – sending secret signals that only those "in the know" could understand (e.g., implicitly disclosing location, sending "wink" signals). These findings highlight how such implicit and complex disclosure serves as targeted impression management. Although these presentation strategies could not completely eliminate the risk of being identified as LGBT by unintended audiences, our participants still seemed to consider them efficient means of balancing such risk against the need to convey information essential to using the apps for their intended purpose.

Implicitly Disclosing T/P/H Identity. Some of our interviewees worried that the cues within such photos that they posted were either too subtle, or not well-grounded within the SMW community. They expressed concerns about the lack of reliable common idiom to implicitly communicate T/P/H identities online. These findings echo Carrasco et al.'s [12] observations that LGBT people attending a conservative US university strove to "be visible" by

“utilizing implicit cues”, e.g., sharing personal photos that carried indications of their LGBT status on Facebook, and engaged with other LGBT students by identifying their implicit cues. We found that many SMWs used non-facial photos to implicitly disclose their T/P/H identity even when they also presented such orientations on their SMW dating apps textually, perhaps as a means of enhancing their dating profiles’ authenticity. As such, our study extends prior work on social-media users’ strategies for LGBT identity disclosure in a more general sense, such as displaying the rainbow flag and presenting same-sex intimacy in profile photos [12]. Therefore, dating apps for SMWs should provide features that assist their users’ development of such a common idiom. For instance, tools could allow customization of personal profiles in ways that implicitly disclose T/P/H identity, perhaps through color-coding.

Implicitly Disclosing Location. To establish trust and reach out to other SMW daters nearby, implicit location cues were also used by our interviewees. Uploading pictures of their location was widely deemed to be strong proof of *bona fides*; and conversely, successfully interpreting the similarly cryptic location information provided by other app users was regarded as sufficient proof of their own familiarity with certain places.

Given that stigmatized users in conservative nations tend to be more careful when sharing photos and locations, future app designs should assist their users to create implicit locational cues to protect their privacy. For example, instead of asking their users to directly state their locations in their profiles, dating apps could allow them to upload photos that implicitly show their locations. However, image-processing technologies on such platforms could automatically recognize photo content [3] and thus generate further privacy risks. Therefore, a photo-matching technique for dating apps could be deployed, to allow users from stigmatized groups to confirm that the photos they are about to upload do not match any other images on social-media platforms.

Using Features of Dating Apps as Implicit Cues for Identifying SMWs Offline. Some of our interviewees also identified people they met or saw offline as SMW by using their dating apps’ “Search nearby” functions, by physically winking offline in conscious mimicry of Rela’s “wink” feature, and in one case, by displaying Rela’s “wink” icon on a keychain. This extends prior literature on LGBT dating apps, which has mainly delineates a trajectory of starting to build relationships in online contexts and then extending those relationships to offline ones [7, 25, 41, 46]. Our unique finding suggests that in Chinese contexts, it is possible for users to use certain dating-app features as a “radar” to identify SMWs among nearby people, and use unique icons to send secret messages about their sexual orientations to other SMWs without being discovered by outsiders. However, because the “Search nearby” function (which in many cases cannot be turned off) automatically shares SMWs’ real-time distance from nearby users, and thus might intensify their privacy concerns, dating apps could improve it by automatically turning it off when users are in certain places (e.g., school dormitories) where they are unlikely to want their SMW status to be discovered.

5.3 Sharing Emotional Content on SMW Dating Apps

We found that posting highly personal and emotional content, observing others’ experiences as SMWs, and communicating with others constituted important practices among our interviewees when using dating apps to seek emotional support and explore their SMW identity. These findings suggest that SMW dating apps in China play a role closely parallel to that of social-media platforms. This idea chimes with prior findings that social media have the potential to improve LGBT users’ mental well-being by providing informational support [29, 50, 61], supporting interaction as they learn how to navigate the social world as an LGBT person [29, 35, 50], helping them gain emotional support [4, 32, 57], and enabling the construction of supportive community environments [4, 29]. Similar to gay-male dating apps in China, which serve as multipurpose platforms for both networking and social support [51, 71], our study shows that SMW dating apps serve as crucial spaces not only for seeking “hookups” and intimate relationships, but also for facilitating social support and identity development, including by enhancing their understanding and acceptance of SMW identity. This might be because in China, there is a lack of social media platforms on which SMWs can freely disclose their potentially stigmatizing identity without high risks of being outed to their offline networks or attracting negative governmental attention [71]. Compared to regular social media platforms, SMW dating platforms, which are less known among the non-LGBT population [71], make it relatively possible for SMWs to separate from their offline networks and create new networks with similar others.

Because sharing emotional content and receiving emotional support emerged as so important for the SMW users in our sample, future app designers could usefully consider emotional content as a distinct component when recommending posts to other users, to enable more users receive support from others. For example, apps could include spaces specifically designed for SMW users’ exchange of emotional support, and develop privacy settings (e.g., anonymity) in such spaces. Apps could also deploy algorithms that detect emotionally charged posts and recommend them to others who present preferences for such content and/or who have recently shared similar content themselves. Additionally, because SMW users might fear that sharing emotional content increases the risk of being outed, it might be helpful if dating apps were able to exclude people within one’s offline circles from viewing one’s dating-profile content. This could reasonably be expected to lessen user concerns about being unexpectedly discovered by people they knew offline [76].

5.4 Obstacles to Building Relationships

According to our interviewees, their limited self-disclosure and internalized homophobia both constituted obstacles to their relationship-building efforts. Previous research has suggested that lack of information (e.g., photos of themselves) makes building trusting relationships more challenging for stigmatized users [7, 41]. Our results support those previous findings in the case of SMWs in China, by pointing out that such limited self-disclosure makes it hard to verify others’ identities, which in turn intensifies privacy concerns. Furthermore, our finding extends the previous studies by exploring how homophobia might negatively impact relationship-building of

SMW users in China. Below, we discuss SMW users' specific challenges to building relationships arising from limited self-disclosure of personal photos, locations, hobbies, and other information.

Assessing Trustworthiness. Due to potential infiltration of dating apps by non-SMWs, our interviewees expressed concerns about assessing the trustworthiness of other users based on their profiles. This echoes previous studies' findings that Tinder users spent considerable amounts of time assessing the trustworthiness of others' profiles, due to similar concerns [25–28]. Furthermore, our findings suggest that the SMWs in Chinese contexts examined potential dates' posts that described their emotions about and experiences of being SMW. Such reading, they said, helped them to determine if these others were genuine, vs. non-LGBT individuals who had registered on the apps for other purposes, and who might find it difficult to fake SMW-related experiences, emotions, and thoughts. A previous study [27] regarding strategies reported that SMW dating-app users sometimes chose to make phone calls to decide whether a contact was actually female, and/or add her to Facebook to see more details about her. In our case, on the other hand, despite scrutinizing others' posts being time-consuming for our interviewees, it was seen as a relatively safe way to identify their trustworthiness without revealing one's own identifiable information (e.g., WeChat IDs, phone numbers), which might trigger risks of being investigated and intervened against by one's offline social circles. Therefore, the designs of future dating apps should encourage their users to publish posts that could be used by other users to assess their trustworthiness. Additionally, prior research that focused on gay men has shown that, to assess a potential dater's trustworthiness, a common approach is to exchange photos in an online chatroom [41]. While in theory the above strategy might also work for SMWs in China, our interviewees seemed very cautious about exchanging any kind of personally identifiable information with online strangers. This was probably because some level of trust had to be established *before* an exchange of photos, phone numbers, and other social-media accounts could take place.

Not Knowing Commonalities Hampers the Initiation of Conversations. Our finding that commonalities of location, interests, and hobbies helped SMW dating-app users to initiate engaging conversations and develop deeper relationships echoes those of Wu et al. [75] regarding the importance to gay men in China of having interesting conversations that unfold topics including common hobbies or experiences.

Given that different motivations and goals for Chinese SMWs' use of dating apps might emerge over time, it was notable that not all of our interviewees expressed any initial awareness that disclosing their hobbies and interests might become important to achieving the core aims of app use. This lack of awareness could have been connected to the fact that the apps themselves had no features to support their users' identification of commonalities, other than a "Hobbies and interests" section that many of our interviewees left blank in the wake of a higher-level decision not to reveal any sensitive personal information such as their job titles, addresses, and dates of birth. Future designs of dating apps could therefore usefully encourage their users to fill out certain profile sections, or not, depending on their app-use aims. For example, if a user's goal is to build relationships with other SMWs,

the app could encourage her to fill out "Hobbies and interests" on the grounds that this will likely yield more positive experiences of initiating conversations. Additionally, since dating-app users' goals and needs may change over time, such apps could automatically send reminders to fill in, update, and/or elaborate their goals/needs and to edit their profiles accordingly. Alternatively, such apps could provide real-time guidance on how to talk about shared interests as chat unfolds [55]. Additionally, allowing users to customize the visibility of their profiles and/or profile sections according to other users' profile information or their trust level might make them feel more comfortable about disclosing personal information [8].

Internalized Homophobia/Biphobia Impedes the Development of Deeper Relationships. Although our interviewees generally expressed interest in developing relationships with other SMWs, some expressed discomfort and even guilt about seeking same-sex relationships. Many appeared to hold beliefs that developing sexual relationships with other women was disgraceful behavior, or a form of "failure" [52, 58, 66] that would be detrimental to their reputations and future careers. Previous studies [18, 45] have suggested that facilitating social support from friends and wider LGBT communities could help to eliminate internalized homophobia/biphobia. However, our interviewees did not seem to perceive China's existing social-media platforms (including LGBT dating apps and online communities) as offering secure environments for this. Therefore, an important future research direction will be to explore how peer and community support for overcoming internalized homophobia/biphobia could be incorporated into LGBT dating apps in socially conservative nations without compromising their users' sense of security and privacy.

6 CONCLUSIONS

This study explored how 43 lesbian and bisexual women in China disclosed their sexual identities and other sensitive personal information, sought emotional support, and built relationships with similar others on three popular dating apps. All the participants reported being highly concerned that the information they disclosed on these dating apps would be discovered by non-LGBT people whom they already knew, and negatively impact their offline lives; therefore, they commonly used strategies of disclosing personal details only implicitly, e.g., by posting photos of themselves that did not include their faces, or not their entire faces, and sharing photos of their surroundings rather than naming where they were. We further found that SMW dating apps not only motivated their users to identify one another offline, but also facilitated their identity development and exchange of emotional support. These key findings' implications for future designs of dating app for SMWs in socially conservative societies were also discussed. In short, our study provides new understandings of what affects Chinese SMWs' sense of what personal information is safe to disclose in the online environment, how it is safe to disclose it, and why.

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