Gay Dating on Non-dating Platforms: The Case of Online Dating Activities of Gay Men on a Q&A Platform

YE WANG, University of Macau, China
ZHICONG LU, City University of Hong Kong, China
ROGER WATTENHOFER, ETH Zurich, Switzerland

Gay dating applications, such as Grindr and SCRUFF, are considered the primary platforms for gay men to conduct online dating activities. However, on Zhihu, a Chinese question-and-answer website, tens of thousands of homosexual users have been searching for romantic partners, which suggests that Zhihu may have unique affordances in online dating activities for Chinese gay men. To better understand how Chinese gay men perceive the affordances of a non-dating platform for online dating, we conduct a mixed-methods study, including observations, interviews, and quantitative and qualitative analysis of users' self-presentations. We find that gay men users publish personal ads by answering "fishing questions" on Zhihu. Through our analysis, we examine how users perceive the affordances of Zhihu to satisfy their social and psychological gratifications at the self, community, and audience levels. Although gay users face the risk of disclosing homosexual identity on mainstream social media, they perceive such risk as acceptable for better online dating experience. We discuss how users respond to severe social stigma in China, and the gap between user needs and the design of gay dating applications. We elaborate on the implications of our findings to discuss the potential benefits for LGBTQ users if LGBTQ service providers collaborate with social media.

CCS Concepts: • **Social and professional topics** → **Sexual orientation**; • **Human-centered computing** → **Empirical studies in HCI**; • **Information systems** → **Social networks**.

Additional Key Words and Phrases: Online dating, LGBTQ, Chinese gay men, social media

1 INTRODUCTION

Since the late 1990s, finding dating partners online has become a popular activity in gay men's daily life [36]. With the development of mobile communication technologies and underlying infrastructure, gay dating applications have become the most popular channels for socialization among the gay community [74]. However, in China, more and more Chinese gay men have moved from gay dating applications [40] to mainstream social media, such as Zhihu, to conduct online dating activities [81].

Zhihu (zhihu.com) is a Chinese question-and-answer (Q&A) website where users can create and edit questions, publish answers, and post articles. The phenomenon of moving from dating applications to the Q&A website for online dating activities suggests that the Q&A website may have some unique affordances in online dating activities for Chinese gay men. However, prior studies have not explored the affordances of non-dating applications in online dating activities, especially for the LGBTQ people. By studying how social media support online dating activities, we can better understand the needs of the marginalized people in online dating activities and inspire the future design of online space for the LGBTQ community. Therefore, we investigate the following research questions in this paper:

RQ1 How do Chinese gay men gather and conduct online dating on Zhihu?
RQ2 How do gay users perceive the affordance of Zhihu in their online dating activities?

On the other hand, compared to western countries, Chinese gay men still suffer from severe social stigma [68]. As a mainstream social media, Zhihu is not designed for the LGBTQ community [25, 55]. Any Zhihu user or even unregistered guests can view these dating questions and answers, while such online dating practices may disclose their homosexual identity to the public, resulting in severe potential consequences [24]. By understanding how the LGBTQ community from non-western cultures perceives the potential risk of identity disclosure, we may inspire the design of global social media in different cultures and countries. Therefore, we also investigate the following research question:

RQ3 How do Chinenese gay users perceive the risk of identity disclosure during online dating activities on Zhihu?

Accordingly, we conduct a mixed-methods study, including observations of online dating activities on Zhihu, interviews with experienced gay users (N=16), quantitative analysis of dating ads of 9,031 users, and qualitative analysis of 93 ads randomly sampled from the dataset. We observe that online dating activities on Zhihu always happens under "fishing" questions. Users answer these questions with their personal ads. If other users read these personal ads and consider the authors as potential romantic partners, they will interact with the authors with voting and commenting, and contact the authors for further communications by private messaging. We further utilize a framework of social media affordances to analyze user experiences of online dating on Zhihu [23]. Gay users perceive Zhihu's affordances for online dating from three levels: presentation flexibility, presentation diversity and self promotion at the self level; public socialization and information recommendation at the community level; audience accessibility, audience suitability, and communication effectiveness at the audience level. Rather than looking for physical (sex) gratifications, social (friendships, romantic relationships) and psychological (sense of community) gratifications motivate gay users to conduct online dating on Zhihu. Moreover, based on their dating experiences, users perceive that the identity disclosure on Zhihu does not bring them serious consequences. Meanwhile, they are willing to take the risk of disclosure compared to the benefit of online dating.

To the best of our knowledge, we are the first to study the online dating activities of LGBTQ communities on non-dating platforms. We elucidate the affordances for online dating of a Q&A website. This contribution may help researchers better understand the interactions within this marginalized group on the mainstream platform and their socialization need and inspire us for future design work. Moreover, we investigate the utilization of social media by marginalized people from a non-western country. This contribution may help researchers understand the cross-culture differences and inspire future work that investigates the interactions between the LGBTQ community and social media in different cultures and countries.

2 BACKGROUND AND RELATED WORK

2.1 Chinese Gay Male Community

Homosexuality is considered morally repugnant in traditional Chinese culture, especially in Chinese Confucian culture [77, 78]. Given that almost everyone got married in traditional Chinese society, homosexuality is regarded as a behavior rather than an identity in ancient times [20, 79]. There was moral criticism because same-sexual practices hinder achieving the ideal Confucian personality [10].

Since the 1920s, the pathologized understanding of homosexuality has been introduced from Western society into China, which has become the dominant understanding of homosexuality in Chinese society. Homosexuality was decriminalized in China in 1997, and stopped being considered a mental disorder in 2001. [53]. Since the first HIV infection appeared in mainland China in the 1980s, ordinary people have equated the gay community with AIDS, resulting in a severe public fear and misunderstanding of homosexuality [10].

In such a heteronormative environment, Chinese gay men usually hide their homosexual identity in public [38, 80]. Hence, they lack normal social interactions within the community [41]. Until 2000, most Chinese gay men met each other hidden in plain sight, at certain corners of parks or known public bathrooms. The homosexual male community gathered in these places for socialization and casual sexual practices [45]. Since the late 1990s [40], with the development of the internet and digital media technologies, the Chinese gay male community started online practices in cyberspaces [64].

Even though Chinese gay men are more free to express themselves online [68, 70] and the modern gay movement in mainland China helps them to identify themselves [10], Chinese gay men are still experiencing social and cultural pressure because of a lack of basic political and civil rights [47]. A huge amount of Chinese gay and lesbian citizens are forced to marry (heterosexual) people of the opposite sex, and the sequential social problems and conflicts reinforce the stigmatization of homosexuality in contemporary society [10, 47]. Against this backdrop, how Chinese gay men make friends through the Internet has become an interdisciplinary topic of human, technology, society, media, and sexuality studies [10, 47, 48, 68–71]. Recently, more and more papers capture a broader picture of cyberspaces for LGBTQ community in non-western countries [7, 44, 59]. In this paper, we aim to explore the sexual identity of Chinese gay men and understand their online interactions and their dating needs, which may inspire us to provide better social support for them in the future.

2.2 Affordances of Dating Applications for the LGBTQ Community

Online dating is an online activity where people search, meet, match, and chat online for romantic purposes [50]. This can be traced back to the time before the emergence of dating sites, where people published personal ads to find romantic partners online [4, 62]. Nowadays, more and more online dating systems appear and help users to explore potential meeting partners more efficiently. Previous studies in HCI have explored self-presentation strategies [6, 29, 34, 73], motivations of using dating applications [31, 65], concerns of using dating applications [28, 56, 72], evaluations on other users [29, 37, 66], dating experiences [68, 70], and design challenges [35]. Van De Wiele et al. [65] analyze the physical, social, and psychological gratifications Grindr users are looking for and summarize six unique themes of motivations: socializing, sex, entertainment, romantic partnership, social inclusion, and community.

There is a line of research that considers the affordances of mobile dating applications [19]. Chan [14] has examined five affordances, namely mobility, proximity, immediacy, authenticity, and visual dominance, which are only provided by mobile applications but not traditional dating

websites. Carpenter and McEwan [11] highlighted the importance of the photographs over text-based self-presentational information, while Blackwell et al. [8] explored the ability to quickly swipe through potential partners and the importance of locations. Although mobile dating applications have affordances in online dating activities, it is still challenging for users to obtain non-physical gratifications on gay dating applications. Chan [15] studied the difficult situation of gay men who are looking for serious relationships or long-term relationships when using gay dating applications. Yeo et al. [76] argued that the interface design of current gay dating applications highlights foregrounds profile photos and weakens textual self-description, which is frustrating for users who seek more durable relationships. Zykto et al. [82] modeled the process of consent to sexual activity on mobile dating applications in two processes: consent signaling and affirmative consent, and further analyzed how Tinder affords online activities of discovering user profile, match notification, and messaging interaction.

Other work examined the shortcomings of dating applications and users' concerns of using these applications. Brubacker et al. [9] studied the phenomenon that users stopped using Grindr. They analyzed a variety of social and technical moves of leaving Grindr and explored users' perception of the shortcomings of the dating applications, such as the consuming time, distracting themselves, and dissatisfaction of finding dates or a relationship. Hardy et al. [35] examined the conflict between the official narrative provided by mobile dating applications and the reality of rural application users. They argued that the system design brings concerns regarding community visibility, accessibility, privacy, and security to rural users, which dating applications have not addressed.

By now, few studies have investigated the affordances of non-dating websites in online dating activities. Lee and Bruckman [43] have examined the influence of the interface design on finding romantic relationships on SNS and elucidated the important role of the friends list feature in finding potential dates, verifying credibility, and validating commitment levels. Zhou [81] reported an observation of some small dating groups on Douban but has not fully understood the motivations of people and how Douban supports such online dating activities. It is essential to look at the transitions of online dating activities from gay dating applications to non-dating platforms to better understand the deficiency of current LGBTQ-specific applications and inspire how the LGBTQ community utilizes social media to meet their desires of social interactions. Therefore, to fill this research gap, we study users' online dating activities on a non-dating platform and their perceptions of the affordances of the Q&A website.

2.3 Social Media and LGBTQ Community

Social media is important for LGBTQ people, where they can obtain information and knowledge of the LGBTQ community, interact with other community members, and obtain support from others [10, 30, 51]. Especially in China, where the homosexual community is large but dispersed, social media enables individuals to gather regardless of geographic limits [10]. Previous studies suggest that social media, such as Tumblr and Facebook, provide homosexual people a "queer utopia" to exchange social supports, resulting in a positive mental influence on them [12, 18].

Social media is also designed for people to meet new friends, keep in touch with old friends, entertainment, online dating, etc. [54, 61]. However, it seems that LGBTQ users can hardly utilize the entire functionality of social media [58]. Because of the worry of stigmatization, LGBTQ users manage their social media ecosystem and present different information on different social media [24]. Devito et al. [25] further investigated the values LGBTQ+ users perceive as platform values based on their interactions with social media. They suggested heuristics for future design work better align with two design-relevant values, i.e., self-determination and inclusion. For instance, Gudelunas [33] found that Facebook is not considered as a useful application for dating among gay men in

New York and Dallas, because using the mainstream applications to date means their identity will be open to friends, family, and coworkers. The emerging phenomenon that happens on Zhihu suggests mainstream social media may also be useful for the LGBTQ community to explore romantic relationships. Understanding user perception of social media during online dating activities can provide heuristics of platform design design that match user needs.

3 METHOD

3.1 Observations of Online Dating Activities on Zhihu

This study has been approved by the Institutional Review Board (IRB) at the City University of Hong Kong where the study was conducted. In December 2020, we observed online dating activities of Chinese gay men on Zhihu with three methods. First, we browsed the popular questions and discussions under the topic of "gay". We explored how users specify their interest in finding romantic partners. Second, we used a keyword search method to locate users' dating activities on Zhihu, including "gay", "finding boyfriends", "online dating". Third, we followed the users who publish popular content under the topic of "gay" and examined their public interactions with other gay users.

We finally found that most of the online dating activities on Zhihu happen under questions of "gay" topic, such as *"How do boys find boyfriends on Zhihu?"*, *"What is it like to be gay and single?"*. These questions are called *fishing questions* by Zhihu users. Tens of thousands of users answer these questions with their personal ads, as "bait". If other users, who are considered as "fishes", read these answers and consider the authors as potential romantic partners, they will contact the authors for further communications.

3.2 Data Collection: User Profile and Personal Ads

The second step of our study was to collect online dating data. We focused on online dating activities under one of the most popular "fishing questions", which has accumulated 9,031 answers by the end of January 2021, while the questions have been viewed more than 100,000,000 times. We used the API services to access all answers (including texts, pictures, and comments made by other users) under the questions for further analyzing how gay men present themselves and interact with each other during online dating activities. The overall process of data collection is compliant with the public privacy policy of Zhihu, where we follow two important rules [67]. The first is that we only collect and use data that are publicly available on the website. The second is that the data we collect will only be used for research purpose. Moreover, the overall data collection process is compliant with the public privacy policy of Zhihu. Zhihu has notified all users that their public information and any published answers might be read, collected, and used by any third party,[1] which satisfies the regulation of GDPR on the rights of the data subject.

We follow the rules of GDPR according to articles 14, 89, and 157 to appropriate safeguards for the rights and freedoms of the data subject. For instance, we have completely anonymized the dataset before data mining, and the data are stored and processed on a private server with strict access control. For user responses, we either report them in aggregate, which is similar to the method in previous work [25] or only provide paraphrased exemplars such that users cannot be identified with our published data. Furthermore, we have removed all contents that may reveal user identity from the paper, such as the city names. This approach is similar to the one in Wang et al.'s prior work [68].

---

[1]Section 3.4, cf. https://www.zhihu.com/term/privacy

3.3 Data Collection: Interviews

From the previously collected online dating data, we drew a random sample of more than 100 users who answered the dating questions. We contacted them via private messages on Zhihu using the personal accounts of the authors on the Zhihu platform, which does not contradict GDPR. Participants knew the purpose of this study, and they sent us their WeChat account after they agreed to participate in our interview study. Previous studies [35, 58] have similar recruitment methods as we have by directly contacting users via private messages on social media. We invited them for further interviews to know more details about their online dating motivations and experiences. We informed users about how we obtained their information (from their dating responses) and clarified our study's purpose in the message. Sixteen users replied to us and were willing to participate in our research project. Because of the ethical concerns, we report the demographics of the interviewees in aggregate. Of our 16 participants, 15 hail from China and 1 from the United States. They are between 20 and 29 years old. The average age of interviewees is 25.6. Seven of our interviewees hold bachelor's degrees, six hold master's degrees, and three have doctoral degrees. All of them have experiences of using other dating applications, including Blued, Fanka, Grindr, and Tinder.

Between January 2021 and April 2021, we conducted semi-structured interviews with these 16 participants through WeChat voice calls. Before the interview, an oral consent form was authenticated to the users, making it clear that we would record the interviews, and their words might be used and quoted in the final report anonymously. All interviewees agreed with this consent form before the interview. The researchers followed an interview guide, ensuring consistency across participants. The interview was designed in three parts. In the first part, we asked interviewees about their personal information, including their self-perceived identity and their use of different dating applications. In the second part, we asked interviewees about their dating experiences on different dating applications. In the third part, we asked interviewees about their perception of Zhihu, including their motivations for using Zhihu, the perceived advantages and disadvantages, and their usage of Zhihu.

Naturally, we also discussed other questions with our interviewees related to our research. Interviews were conducted in Mandarin, audio-taped, and transcribed by native Mandarin speakers in the research team. Each interview took 30-45 minutes, and each participant received a 100 CNY honorarium for their time.

3.4 Analysis

We analyzed the interview data with an open coding method [21]. We coded users' responses into practices, motivations, and perceptions of the dating risk. Two native Mandarin-speaking researchers coded all responses individually. Only when researchers agreed on the code, the result was added into a codebook shared among the research team. Then, these codes were translated into English and discussed among the research team. During the discussion period, we analyzed the raw data again to ensure the correctness of our final qualitative findings.

We quantitatively analyzed the 9,031 answers and their comments. We focused on how much text they used to present themselves and how they interacted with others by commenting. On top of that, to better understand the content of self-presentation on Zhihu, we randomly sampled 93 answers and coded each answer manually. We read the first 10 answers and classified the content into 13 topics (10 for texts and 3 for pictures): basic information (heights, weights, top/bottom), location, education, financial status, hobbies, daily life, personality, dating experiences, personal view on affairs, requirements of partners, picture of the face, picture of the body, picture of daily life (pictures which do not aim to show faces and bodies, even no faces and bodies, but more about

things in life, such as food, travel, sports, etc.). Then, two native Mandarin-speaking researchers coded the remaining 83 answers individually and communicated with each other to reach agreement when they encountered different opinions.

3.5 User Profile of Zhihu

After collecting online dating data on Zhihu, we compared the user profile of Zhihu [3, 39] with Blued and Fanka, which are the two most popular gay dating applications in China. Both of them are location-based real-time dating applications, while Fanka also provides a matching mechanism similar to Tinder.

First, Zhihu users are mainly young people, i.e., 72% of Zhihu users are between 20 and 29 years old, while other gay dating applications attract users from a much wider age range. The proportion of Blued and Fanka users aged from 20 to 29 is 24.75% and 47.68%, respectively.

Second, the educational level of Zhihu users is high, i.e., more than 80% of Zhihu users have a bachelor's degree or higher [39]. However, there are no statistics of the users' educational level of Blued and Fanka. We consider two other numbers as a reference: 9.3% of all Chinese internet users have a bachelor's degree or higher [13], and 51% of Chinese LGBT participants of an online survey have a bachelor's degree or higher [60]. These two characters suggest that Zhihu users are mostly young and relatively well-educated people, which is consistent with the demographics of the interviewees.

4 COMMUNITY GATHERING ON ZHIHU

P3 decided to cancel his Blued account when he heard about what happened to a friend. His friend contracted HIV after his first sexual date with another Blued user. P3 just started college at that time and did not know any gay friends outside the school. This incident that happened to his friend made him realize that gay dating applications are not as useful as he thought: *"I was shocked when I heard this. I want to make friends and boyfriends. But I also want to ensure myself healthy and safe. I dare not use Blued anymore."* After that, P3 has never used any gay dating applications. However, although he lives in one of the most LGBTQ-friendly Chinese cities, P3 found it very hard to make new friends. Until one day, Zhihu pushed him a question that opened a new window for him: *How can gays find boyfriends on Zhihu?* He read others' answers and published his own dating ads, starting the new online dating practice.

Over time, these fishing questions have gathered a larger number of answers and have become the main place where the gay users interact with each other on Zhihu. Because these questions are very popular under the topic of homosexuality, when users browse related content on Zhihu there is a high probability, the platform will recommend these questions to them. P12 has a similar experience as P3 for noticing these fishing questions on Zhihu: *"I am a long-time user of Zhihu. Once I was curious about articles about Chinese gay men, so I browsed the related topics. Then I saw these questions and answers that aim to make friends, which let me know that I can also use Zhihu as a dating application."* Although P12 continues to use other gay dating applications to meet people, Zhihu has become an important platform for his online dating activities.

As more and more users are dating on Zhihu, some other Chinese gay men who can not find appropriate romantic partners on gay dating applications are guided to the platform by their friends. The first time P8 knew that Zhihu could make friends was when his friend recommended it to him. He had just broken up with his ex-boyfriend and was in his first year of doctoral studies in the United States. Although he was able to meet more gay people around him through location-based applications, he still has concerns: *"I still prefer having a boyfriend with the same cultural*

	Affordance	Short Definition	Related Zhihu Features
Self	Presentation Flexibility	Ability to present oneself using a variety of content formats and styles.	Free input field where users can input either text, photo, and video without any restriction of the format and length.
	Presentation Diversity	Ability to present oneself beyond self-presentation content.	Other platform activities on Zhihu that deliver the information of the users to others, such as answers of other questions, and articles.
	Self Promotion	Ability to promote oneself presentation within the community.	The ranking mechanism of self-presentations on Zhihu. Users can update self-presentations to push their information to other actors.
Other Actors (Community)	Public Socialization	Ability to interact with other actors.	Voting and commenting functionality that allows users to interact with each other under the public without sexual desires.
	Information Filter	Ability to filter the display of self-presentations of other actors.	Information filtering by Zhihu, which recommends and hides dating information from users.
The Audience (Dating Candidates)	Audience Accessibility	Ability to meet potential dating candidates.	The ranges of the audience that users can access. Zhihu users can browse any number of self-presentations of other users without any limitations, such as locations or memberships and communicate with them through private messaging.
	Audience Suitability	Ability to meet dating candidates with similar dating purposes and meet their requirements.	Not location-based user recommendation, which reduces the use of the platform for dating purposes by people who only seek sexual relationships.
	Communication Effectiveness	Effectiveness of exchanging information with dating partners.	Multi-dimensional personal presentation, which improves the efficient of information delivery and avoids interrogative conversations.

Table 1. Users' perceptions on online dating affordance of Zhihu and related platform features and uniqueness.

background. Here (in New York), most people on dating applications are western, not Chinese." After reading some dating ads and communicating with other users on Zhihu, P8 has deepened his recognition of Zhihu for dating.

Zhihu users who self-identify as homosexual extend the functionality of Zhihu to find dating partners. Dating is not the only function of Zhihu for them, but just a new function they discovered when using the application. Meanwhile, Zhihu also attracts other users who had negative experiences with other gay dating applications.

5 PERCEIVED AFFORDANCE OF Q&A-BASED ONLINE DATING

As suggested by DeVito et al. [23] of studying affordance on social media, we did not only focus on platform features of Zhihu, but also considered user perceptions [32] to investigate how Zhihu supports online dating activities for the Chinese gay community. By analyzing user perceptions, we were able to better understand how users perceive Zhihu compared to other dating applications with online dating affordance, as well as the the individual differences between users who prefer different dating platforms. In this section, we report our findings from three levels based on the model of affordance of social media [23], namely the self, other actors (the community), and the audience (potential dating candidates). We examine at each level how users perceive Zhihu's affordances for their online dating activities (cf. Table 1).

5.1 Perceived Affordance at the Self Level

Self-presentation is considered an important factor in online dating activity [27, 34], enabling users to manage others' impressions of themselves within the online community and may further influence their online dating experiences, which is also related to the user perceptions of affordances at the self level.

We found that there are three affordances distinguishing Zhihu from other platforms to meet their needs at the self level for online dating activities: presentation flexibility, presentation diversity, and self promotion.

5.1.1 Presentation Flexibility. Presentation flexibility refers to the ability that users can present themselves with a variety of content formats and styles. As a question-and-answer application, Zhihu does not provide tools for online dating. Users can only use the existing functionality to present themselves. As we have shown in section 3, dating activities are mainly conducted under fishing questions. Zhihu users answer the fishing questions as personal ads to present themselves, which are similar to user profiles on dating applications.

Compared to gay dating applications, where user profiles are limited by the templates provided by the applications, Zhihu users have more freedom to present themselves. They are able to use more free-text to present themselves from all aspects and are not limited to sex-oriented information. P7 feels that he can let other users know whom he is through writing a free-text answer as his personal ad. He is not just the symbol of three numbers (Chinese gay men always introduce themselves with three numbers: height, weight, and top/bottom preferences), some face and body pictures, and 140 characters (Chinese gay dating applications only allow a textual introduction less than 140 characters) on gay dating applications anymore: *"People only care about how you look and whether you are top or bottom on other apps. But here, I can write more things about myself, like my hobbies, my dating experiences, even my expectation of future life. This is what I want others to know about myself, not what the dating applications want me to write."*

This is definitely not a single case on Zhihu. By analyzing personal ads under the fishing questions, we found that most Zhihu users would like to write longer texts to present themselves, up to ten thousand characters(Figure 1). The average length of personal ads is 352 Chinese characters, which is 2.5 times more than what they can write on gay dating applications. Moreover, they would like to share their daily lives, their views of different affairs, their dating experiences (Table 2); which are not common on other gay dating applications, where the standardized, simple, and sex-oriented self-presentations dominate [6]. Compare to body pictures, they prefer to share pictures presenting their daily lives (Table 3).

5.1.2 Presentation Diversity. Presentation diversity refers to the ability that users can present themselves regardless of the specific content for self presentations. Since Zhihu is a question-and-answer platform, users also answer non-dating questions and post some articles on Zhihu. These answers and articles can help users to show more details of themselves which are not included in the personal ads. Other activities on the Zhihu platform can reveal further aspects of the user's personality which are not directly linked to dating.

P12 is a literature lover and writes novels. Although he wants his dating partners to appreciate this side of him, he does not think including his literary works in his personal ads is a good idea because it might make his introduction unfocused and tedious. However, he is not worried about this on Zhihu. He publishes his novels under the topics of literature on Zhihu, while these activities are shown on his personal page, which is public to anyone who views the website: *"People who are interested in me will come to my website, and then they can see my novels. I think it's good. This way*
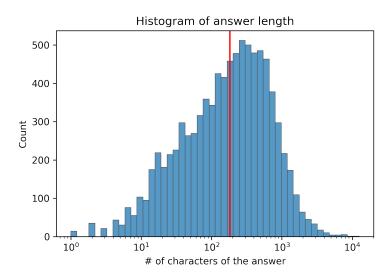
Fig. 1. The distribution of length of personal ads on the fishing question. The median number of characters is 183.

of communication is quite natural. I don't deliberately send my novels to them, but people who are interested can see them and understand me better."

5.1.3 Self Promotion. Self promotion refers to the ability to present oneself or to make information visible to a wider range of audiences. There are often hundreds of thousands of users on dating platforms, and each user might only notice a limited number of dating profiles. Users want their dating information to be seen by more potential dating partners, which might determine the success rate in online dating activities. In most dating applications, the platform determines how much of a user's information is displayed to other users, while the recommending mechanism is not public. Users are only able to increase their exposure by paying membership fees.

However, on Zhihu, dating ads under the fishing question can be listed by the updated time, only determined by the last time users edit their answers. Therefore, users can increase the exposure of their personal ads to a wide range of audiences by updating the answers under the fishing questions. P8 has utilized this promotion strategy for his online dating on Zhihu. He can make his answer be listed at the top position under the question and might be viewed by more users. *"When I was sad or felt that life is so difficult for me, then I have a strong desire to make friends and update my answer to these dating questions. Not too much, maybe just add one or two pictures. I hope my answer can be exposures to more users."* Correspondingly, after his updates, he receives more messages from potential dating candidates: *"There will indeed be more private messages after the update. I guess there may be some new users browsing this dating problem, and they see my answer because of the update."* Users with a strong dating need can effectively increase their exposure in a short time on Zhihu. Therefore, users perceive that Zhihu has a better self promotion affordance for online dating compared to other dating applications.

5.2 Perceived Affordance at the Community Level

Online dating is not a process with single participants but involves different actors within the online community as well. It is important for the dating platform to support users at a community

Category	Paraphrased Exemplars	Frequency
Location	I'm studying IELTS in (a city), and I'm going to study Fashion Design in (a city) next year.	78
Basic Information	I'm generation Z, 185 cm tall. I do not care top/bottom	77
Daily Life	I like to cook for my family and friends. When I was studying in Beijing, I often cooked for classmates' parties. I am good at cooking Sichuan and Hunan dishes. I spend most of my leisure time running, reading, and practicing calligraphy.	67
Education	4th year PhD, Organic Chemistry	61
Hobbies	I have many hobbies. Music: opera, Bel canto bass and falsetto tenor; folk music, Angang, Chen Hongyu; European and American jazz, Chalps …	59
Requirements of Partners	I expect you are at least 5 cm taller than me. Those who graduate from top universities are super attractive to me. It would be better if you also study medicine.	45
Personal View on Affairs	Two people together is not a game. In addition to the love we have, we also have to consider other perspectives: are we economically independent? How will we consider our relationships if we are very busy?…The fact is, most people believe love at first sight, but I believe that the families are well-matched in terms of social status is more important.	42
Financial Status	I got everything I wanted through hard work. The salary at the real estate company is very good and far exceeds my expectations.	39
Dating Experiences	My previous relationships have not gone well. My previous boyfriends are all Sagittarius, so maybe this is my fate as Virgo can't escape.…	32
Personality	I am loyal to my relationships. But I am quite passive during dating.…	31

Table 2. Textual content of self-presentation of 93 sample answers.

Category	Frequency
Face Picture	58
Picture of Daily Life	57
Body Picture	45

Table 3. Image content of self-presentation of 93 sample answers.

level for online dating activities, while the atmosphere of the community and the interactions within the community may determine the dating experiences of users. We find Zhihu has two affordances for online dating at a community level perceived by users: public socialization, and information filter.

5.2.1 Public Socialization. Most of the dating applications focus on private one-to-one communications between users. However, users also need socialization between different users. Because Zhihu is a public social media, it supports users to vote and comment on others' self-presentations (answers). Compared to other dating applications that allows users to comment on others' posts, Zhihu has two unique mechanisms that afford more socialization between users.

First, according to the ranking mechanism of Zhihu, answers that receive more votes and comments will be ranked at a higher position under the question and has more opportunities to be recommended by the platform. Therefore, users do not always consider that voting on an answer means *"I like this guy"*, but more like *"He is a good guy, and I hope more people can know him"*. P1 considers his voting and commenting to be simply a support to the author, and not equivalent to expressing a favorable opinion of the authors: *"If the answer is detailed and I can feel the sincerity, and the user's appearance is OK, then I will vote the answer. Comments are quite random. Sometimes I make a comment to an answer just because he and I both come from the southern part of China."*

When we qualitatively analyzed users' self-presentation, we found that some users mention other users in their answers. We then studied the authors' websites and the people they mentioned to understand why this happens. We found that these mentioned users would vote for the answers they are mentioned in. If a user votes for an answer, his followers will observe this activity. This answer will be promoted to his followers. Therefore, this finding also indicates that public socialization has been widely supported on Zhihu.

The second mechanism is the display of self presentation. Because Zhihu is an open social media, users can see any other user's dating profile and self presentation, which are not limited to those recommended by the platform. Moreover, users do not have to interact with others through private messages, which might be deliberate and purposeful. However, by publicly commenting on other's posts, users feel free to discuss other topics that are not related to dating, which makes users feel more likely to meet friends with common topics and similar identity.

P12 meets a gay friend on Zhihu through commenting interactions. His friend posts some pictures of his pets in the personal ads while P12 also has a pet and leaves a comment to his friend:*"If I send a private message to him, it might make him think I want to date him. But a public comment can show that I just want to discuss the pets and not other desires."* Because these interactions are public to all community members, P12 considers their conversation is not flirting and only focuses on the topic he is interested in, which enables them to build a friendly relationship.

5.2.2 Information Filter. Platforms have their own mechanism to collect and deliver users' information to other users. Some content might be recommended by the platform and will receive more attention from the community, while others might even not be visible to other users. Therefore, from the user's perspective, their perception of the community where they conduct the online dating activity is determined by the platform's information filter.

The recommendation system of each application also determine which contents that user can view. The promoted contents can be considered platforms' guides to users' preference and deepen user perception of the gay community. P11 decides his self-presentation on Fanka and Zhihu based on his feelings about how the platform wants him to be: *"Fanka always recommends me some users, who have pictures sharing their lives and inadvertently reveal some of their Cartier jewelry, some luxury items, or whatever. This makes me feel that the platform is full of rich guys and that I should post these things to make friends on this platform as well. However, Zhihu recommends me users who make me feel that they are smart and thoughtful. So I learn from them how to present myself on Zhihu."* Applications present different information to users and is perceived by them as a role model for gaining attention on these platforms, further influencing their behavior and the atmosphere of the community.

For those users who prefer serious relationships, a more natural atmosphere motivates them to use Zhihu. P8 admits that since different platforms may recommend different content, he posts information differently to get more attention: *"What I write on Zhihu is more about my study, my life, and my emotions. Most of the people who contact me have similar experiences or are interested in my life. But on Fanka, I post pictures of the luxury items I bought. Other people can only notice that, and those who contact me are also with strong materialistic desires. If you are faced with this situation, which kind of person would you like to fall in love with?"* Here is a paradox for P8 to find dating partners on Fanka. If P8 does not present himself as what the platform may recommend, his profile will not attract attention from the gay community. Nonetheless, after presenting himself in a popular form, he cannot attract ideal dating partners. This is why he prefers Zhihu to date. Only when the values of the community and the individual are similar can users make better use of gay dating platforms.

Furthermore, P7 has mentioned his findings during his Zhihu practices that surprised us. He considered that Zhihu filters low-quality dating profiles. We then found that under the fishing questions that we studied, 1747 answers were not presented on the question website, users can only view them at a very specific site. The main problem with these answers is brevity. Some of them contain only a single picture, while others list only the basic information about the author, which is quite similar to self-presentation in gay dating applications. Zhihu officially explains how this mechanism works on their websites[2]. AI algorithms identify whether the answers are non-responsive or malicious. Meanwhile, administrators manually identify and filter answers. Based on this findings, we can infer that Zhihu officially encourages users to express themselves in dating activities with more than just their appearance and basic information. P7 expressed that he feels comfortable when dating on Zhihu because the platform maintains the atmosphere of the gay community.

5.3   Perceived Affordance at the Audience Level

Finally, we present the perceived affordance of Zhihu at the audience level. In online dating activities, the last step is to interact with the dating partner. Users feel that the Zhihu platform helps them to better conduct online dating practices from the following perspectives: audience accessibility, audience suitability, and communication effectiveness.

5.3.1   Audience Accessibility. Audience accessibility refers to the ability of users to meet potential dating candidates online. In particular, the vast majority of current dating apps divide users by geographic location, while the systems recommended users are concentrated in a certain area, and the number of recommended users is limited. Although geographic distance determines whether users can easily meet their online dating partners offline, these mechanisms limit users' accessibility to potential candidates. On Zhihu, users' self presentations are mostly published as answers under the fishing questions. Although the platform also has its own recommendation mechanism to rank these answers, users can explore as many users as they want.

P4 considers that Zhihu provides a better affordance in audience accessibility for his online dating activities as a short distance means that he is limited to meet people only around him. He thinks that distance is not the most important thing when he decides on a relationship. Therefore, Zhihu allows him to meet more people that he is looking for: *"It's not that I don't care about the location. It's just that the location is less important to me than the person's character and interior. As long as two people can work together, then the geographical location is not a problem. That's why I prefer Zhihu, where I can meet more people, allowing me to better understand from their self-presentation whether the person is ideal for me."*

---

[2]https://www.zhihu.com/question/20120168

Other users have a similar idea as P4. When we ask them about their idea of long-distance relationships, almost all of them have a positive attitude. P11 thinks that transportation is very convenient nowadays: *"It only takes me few hours by plane across China. I don't think distance is a big problem for me. I can visit him every two weeks. It is totally enough."* P5, on the other hand, considers that he is still a student and does not have a deterministic future location: *"Because I can actually go to any city after graduation. I don't want to give up a good opportunity with a person just because of the distance."* Therefore, for Chinese gay men on Zhihu, long-distance is not the most serious hindrance for them in a relationship. If they cannot find a suitable dating partner nearby, they care more about how good the people are, but not how close they are. Zhihu enables them to know nearly tens thousands of users, which increases the possibility to meet appropriate dating partners.

5.3.2 Audience Suitability. Audience suitability refers to the ability for users to meet dating candidates who share a similar dating purpose and meet their requirements. Since different users have different needs for dating, it is difficult to argue which platform has the better affordance. However, our interviewees perceive Zhihu has a better affordance for finding dating partners who are looking for serious relationships, not casual sex, than other dating applications.

First, as we discussed in Section 3.5, most Zhihu users are young and well educated. Therefore, our interviewees feel that they are more likely to meet people with similar backgrounds on Zhihu, which meets their requirements for an ideal partner. Although he uses both Blued and Zhihu for making friends, P9 feels that the people he met on these two different applications are very different. Such a gap is mainly because the user profile of Zhihu is far away from the user profile of other gay dating applications. *"I feel that the people I meet on Zhihu have higher education and better quality, but the people I meet on Blued have diversified background."* For P9, educational background is a critical factor influencing his mate selection process. Other interviewees agree with his idea. P16 tells us that if he just wants a sexual partner, then he does not care about whether the partner went to school or not. However, when considering a long-term relationship, education background is important: *"In fact, I'm not saying that my standard is very high, but I hope my boyfriend has at least a bachelor's degree. I'm not saying that people without a degree are terrible, but I still hope to find someone with a more common language."* Meanwhile, Table 2 shows that the majority of users will include education information in their self-presentation. Coupled with the lack of opportunities to meet peers through other gay dating applications, it is natural that gay users of Zhihu utilize the platform for online dating. Although it is difficult to attribute this perception to a single feature of Zhihu, the functionality and contents of Zhihu attracts users who are mainly well-educated, which also happens to meet the requirements of these people in mate selection, while it provides such affordance in audience suitability for online dating.

On the other hand, the functional limitations of Zhihu prevent some people who look for casual sex from using it. P9 compares different users he met on Blued and Zhihu and considers that those who are looking for casual sex gather more on Blued: *"If he is a guy who wants a sexual partner, how would he use Zhihu? It is almost impossible to find someone closely enough for immediate sex. If someone only wants sex, he will not waste time here."* Users do not know the exact geographic distance between themselves and potential dating candidates, which makes dating on Zhihu less convenient. However, because of this inconvenience, users who are just looking for fun will spontaneously gather on gay dating applications, which makes P1 think that the vast majority of the platform is about sex: *"Many users on Blued speak in a way that makes me feel that there is no way to communicate more with them. It is purely for the sake of sex and sex, very erotic."* Thus, because of the non-located-based mechanism, there are fewer users on the Zhihu who seek only casual sex,

while those who seek serious relationships make up the majority, which provides affordance for these users to meet dating candidates with a similar dating purpose.

5.3.3   Communication Effectiveness. Communication effectiveness refers to the effectiveness of users in exchanging information with dating partners. Our interviewees consider Zhihu's affordance on communication effectiveness from two perspectives. First, the information delivery on Zhihu is more efficient and avoids interrogative conversations. Second, the self-presentation helps users to build a comprehensive perception on dating partners and enhances their perception on the authenticity.

In online dating, which is not solely for sexual behavior, exchanging deeper information beyond appearance and basic information is always necessary. In gay dating applications, information is exchanged through private communication. However, on Zhihu, users do not need to repeat it multiple times because their information is available to everyone who accesses their answers. P4 considers the dating on Zhihu is upgraded compared to gay dating applications: *"Now I can broadcast the message, but not through a point-to-point mechanism. The same is true when I contact others. I do not need to ask people again and again for the same question, which is quite boring."*

On top of information delivery efficiency, P1 finds that the comprehensive self-presentation he provides on Zhihu encourages other users to find common casual chatting topics: *"Because I have written the school I graduated from, some people will talk about this topic, such as his school is very close to mine. I was working in a German company, and some users start the conversation with me from German study."* Compared to interrogative conversations, which are not ideal for developing serious relationships and are avoided, casual conversations can be established easier on Zhihu, which is welcomed during online dating [75].

Furthermore, P8 considers that the information he gets on Zhihu is more comprehensive. Users' self-presentation on Zhihu includes more information, which helps him to determine whether he wants to date them:*"If he writes about his future plans, I can better determine whether it is possible to develop a relationship with this person. But on Fanka, how can I know this, if he just posts face pictures?"* Moreover, P8 finds that he can explore more characters of the authors from their answers and articles not under the fishing questions, which consequently helps him build a more vivid image of the dating candidates: *"One time, I viewed a dating answer and the profile of the author. I found that he answered a question about holidays and posted some photos of how he celebrates them. I suddenly thought, wow, this person likes life so much and is very ritualistic about all aspects of life. Living with such a person will definitely make me happy. So my good feeling for him has been strengthened."* Furthermore, their historical activities often span a long period and different topics, and even occur before the authors attended dating activities. The information is not purposely embellished for dating purposes, deepening trust in the content's authenticity.

To P16, the information he acquires on Zhihu is more realistic. Current technology allows users to present a deceptive appearance in photos. Therefore, when online dating partners of gay dating applications meet offline, they may feel a strong sense of disparity because they pick dating candidates according to their appearance. P16 has several terrible experiences of meeting dating partners offline: *"I have met a lot of people on Fanka. They have great photos and are attractive to me. But when I meet them in real life, they are so different from how they look like online. All pictures they post are fake and disguised."* While he has a better perception for people on Zhihu: *"I have to admit that the people I meet on Zhihu are more real. How can he pretend to be another person for all his articles, answers, and other text he writes. I feel that they are almost the same as they behave on Zhihu when I meet them."*

Because of the presentation flexibility and diversity supported by Zhihu, for our interviewees who are looking for serious relationships, Zhihu provides effective communication with others and

comprehensiveness and authenticity in the information they receive, which makes them perceive Zhihu's affordance in information effectiveness.

6 PERCEPTION OF RISKS OF IDENTITY DISCLOSURE ON MAINSTREAM SOCIAL MEDIA

As a public mainstream social media, Zhihu is geared to a broader group of people than those gay dating applications. Therefore, disclosing the homosexual identity on Zhihu is risky. Although users are not required to register with their real identity on Zhihu, they still have a certain chance of being noticed by the people around them through their answers and articles. In this section, we report user perception of risk of such identity disclosure, and their attitudes toward such risks.

6.1 Perceived Risks of Identity Disclosure

P15 happened to come out of the closet to his classmates because he once answered a question about his school on Zhihu: *"I haven't used my real name as my account name. However, I found that some of my classmates followed me on Zhihu. They didn't know I am gay. My dating answer is also in my personal website, so I came out of the closet. It is a little embarrassing to me when I meet them."*

The personal information users disclose on Zhihu can be easily collected by others automatically, resulting in more serious privacy concerns. As Zhihu notices user, any third party has access to the data published by the users, including their pictures, age, job, location, and many personal experiences. It is impossible to collect the same data on gay dating applications as easily without the permission of the applications. P16 found out that his information had been used maliciously by others because of publishing personal ads on Zhihu, which made him change his self-presentations: *"I did put my own photos on Zhihu before. However, I once found that someone else had used my photo to answer another dating question. If he uses my face to cheat, to date, or do something terrible, I think it would be a bad influence on me as well."*

6.2 Attitudes to Perceived Risks

Despite the security concerns, many users continue to publish their personal information on Zhihu. For P15, even though his classmates follow his account, he does not feel that this matter has any effect on him:*"It seems nothing happened to me after I found out they know I am gay. They do not have strange attitudes or behaviors toward me. So I feel it might not be a serious matter, and I do not care about it anymore."* P16 just deletes his photos, but continues his dating activities on Zhihu.

In talking to interviewees, we found that some do not care about disclosing their identity on Zhihu. It's not because they have been entirely open about their homosexual identity, but they trust the people and the mechanism of Zhihu. P10 does not want his relatives to know he is gay, but he does not think that they will observe his personal ads on Zhihu: *"First, I don't think my relatives will use Zhihu at all. This app is not something they are interested in. Secondly, they will never search for LGBTQ online. It is something far away from their lives. So I never worry about that."* He compares Zhihu and other gay dating applications: *"If they really want to know whether I am gay or not, it is more dangerous to use Blued, right? It will directly recommend my profile to users who are nearby. They can directly see my profile on the first page. But on Zhihu, thousands of answers, how can they find mine?"* Furthermore, considering the imagined audience, P9 decided to reveal both his homosexual identity and personal information on Zhihu: *"I had some concerns before. But I still believe in the quality of the gay community on Zhihu. Also, photos of myself will also make more people interested in me. So I think it's more rewarding than risky."*

6.3 Platform Affordances to Mitigate Risks

On top of that, Zhihu provides a function that users can answer questions with anonymity. In such a case, other users cannot recognize the identity of the answering author and cannot send private messages to the author. This anonymity enables users to protect privacy. We find that 35 % of users answer the fishing question without revealing their identity.

Anonymous users can only send private messages to those who comment on their answers for further communications. We also commented on some anonymous answers to invite them for interviewing. Unluckily, we have not received any response from any of them. We can only infer that although anonymity protects users' privacy on Zhihu, it might reduce their online dating opportunities because of the inefficient interactions.

7 DISCUSSION

As suggested by Aiello et al. [1] and Chavez [17], when studying LGBTQ communities, we should consider culturally specific contexts. Most of previous studies of gay online dating practices focused on Western users [17]. Therefore, in this section, we first situate our findings in the context of Chinese culture, and discuss how various dating needs influence online dating activities of Chinese gay men. Then, we discuss the gaps between the dating application design for the Chinese gay men and their dating needs. Finally, these challenges motivated us to discuss general implications for the application design and research communities.

7.1 Dating Needs of Chinese Gay Men

Our findings reveal that some Chinese gay men perceive their dating experiences with dating applications unsatisfying because they can hardly find people who have the same dating needs. More precisely, they have a hard time finding people who also seek serious relationships when using dating applications. Their perceptions suggest that Chinese gay men may have various dating needs, which may even further indicate the divergence of the Chinese gay male community in the face of social pressure.

Until now, homosexual marriage is not recognized by law in China. More than 90% of Chinese gay men eventually enter opposite-sex marriages and do not disclose their homosexual identity to others [5, 45]. As the consequence, the rest of the Chinese gay men who do not want heterosexual marriages, face pressure from both the outside and inside of the gay community [42, 47]. Although previous studies suggest that the need for same-sex behaviors may exceed the need for same-sex relationships for Chinese gay men [47], we do not claim that Chinese gay men only look for casual sex on dating applications, while they may also want to build relationships with others. As reported by Wang et al. [68], around 35% of users who are not in stable relationships are interested in finding boyfriends with dating applications. However, the number may not support the claim that most Chinese gay men are looking for serious relationships on dating applications. First, the prior study [68] shows that nearly ten percent of users in stable relationships also believe they are interested in finding boyfriends through dating applications, which may challenge the definition of "stable relationship" and "boyfriend" in previous study. Second, casual sex is not a choice of the application usage purpose in the prior study [68]. Therefore, we may rethink the dating needs of Chinese gay men.

Our study may provide another perspective to explore the dating needs of Chinese gay men, more precisely, the perspective of those who admit their homosexual identity and look for serious relationships. Although our study only involves a small number of users, the increasing dating activities on Zhihu may suggest that the dating needs of more and more Chinese gay men cannot be met on dating applications. As we reported in Section 5.3.2, our interviewees perceive that most

people they meet on dating applications were only looking for casual sex. Therefore, it is hard for them to distinguish suitable dating partners on dating applications. Consequently, these users are immigrating to cyberspaces other than dating applications. There will also be users looking for both hookups and serious relationships on different platforms. However, we should notice that in China, most gay men do not admit their sexual orientation and will eventually choose heterosexual marriages [47], while their dating needs may be sexual-related, temporary, and undisclosed. It might be challenging for them to conduct online dating activities on mainstream social media [81]. Our interviewees perceive that gay men who only look for casual sex dominate the community on dating applications. Some gay men may even have a stigmatized perception of gay people who use dating applications. For instance, when we observed the dating activities on Zhihu, many users specified that they do not use dating applications anymore in their personal ads. With such a statement, they distinguished themselves from other Chinese gay men who use dating applications to demonstrate that they are serious about finding dating partners but not just looking for sexual relationships.

Due to the limited scope of our study, what we discuss are only some inferences from our limited observations and data. From our findings, we may infer that most Chinese gay men are looking for casual sex on dating applications, and the group of people who look for serious relationships consider themselves as the minorities, which may be different in other cultures and countries. Therefore, we expect that future research in the Chinese LGBTQ community will consider the social challenge faced by the minorities, which may lead to a better understanding of the unique phenomenons of the LGBTQ community in China.

7.2 Gaps Between User Needs and Application Designs

Apart from the various dating needs of Chinese gay men, the gaps between user needs and the application design are another critical factor that leads to the unsatisfaction of users on their experience with dating applications. The design we are talking about here is not functions or features but how the platform guides user activity. In particular, some Chinese gay dating applications encourage users to find casual sex with others, which accelerate the process of eroticization.

As the leading dating application in China, Blued's staff members have stated that Blued's fundamental purpose is to meet the sexual needs of its users [52]. They believe that their business can only scale if they win over the low-end users. In addition, Chinese gay dating applications are more interested in capitalization, the introduction of gay-content live streaming [70, 71] and overseas surrogacy agency services [52] (surrogacy is illegal in China [26]). Therefore, the content on these gay dating applications is mostly sexy pictures, live streaming with soft pornography, and the life of high-class people [71].

Similarly, Chen [16] reported that Chinese gay men had experienced the fear of being outed, anger at being deceived, and disgust over sexual harassment of using dating applications. He examined the phenomenon that Chinese gay users kept installing and uninstalling the dating applications and found that apart from the joy and hope of finding partners, the dominance of fear demonstrates a manifestation of contemporary Chinese queer politics. The circumstance may encourage Chinese gay men leave dating applications to find other cyberspace for online dating activities.

When gay dating applications deliver information about sex, money, and surrogacy to users, we should seriously consider the impact of these messages on individual users and the entire community. For example, these messages may influence teenagers and change people's self-identity on homosexuality. In China, we can hardly find any other LGBTQ applications other than gay dating applications. Therefore, gay dating applications are not just tools for LGBTQ dating, but may also influence the perception of homosexuality in society [10]. When sex and money become

the symbol of these applications, the social stigma against the Chinese LGBTQ community will be deepened.

We do not claim that it is wrong for dating applications to satisfy users' sexual needs, while we also notice that it is important to consider the various user needs of the minorities. However, this does not mean that sex and money should be the dominant content on dating applications. Although our study only involves few users and our data may not fully prove the dominance of sexual content on the platform, the fact that tens of thousands users choose to turn to mainstream social media at the risk of homosexual identity disclosure may indicate that there are some problems with current dating applications. Therefore, satisfying users' sexual needs in paralleling with their other dating needs and building a more diverse community culture may be one of the challenges to Chinese LGBTQ applications in the future.

7.3 Implications

Although we take the online dating activities of the gay male community in China on non-dating sites as an example in this paper, we do not aim just to report specific content in China. In this subsection, we discuss the implications from two perspectives based on our findings and beyond the specific content, namely from service providers and researchers.

7.3.1 LGBTQ Service Provider. From the dating application perspective, we argue that collaborating with mainstream social media may provide users with a better online dating experience. For example, LGBTQ service providers could provide dating services on mainstream social media. On the other hand, they could also utilize users' information on mainstream social media, which may not be gay-related content, to find proper dating partners. We discuss the potential advantages from the following perspectives.

First, as reported by Wang et al. [68], many Chinese LGBTQ users are suffering from social stigma in China, while they rarely use dating applications in public spaces as they feel embarrassed if others know their identity. We find that dating on mainstream social media might reduce users' concerns about interacting with other gay people in public spaces. When users conduct online dating activities on mainstream social media, the online dating activities are not separated from other online activities as everything is integrated on the same platform. Therefore, others cannot easily recognize whether the users are conducting online dating activities with other gay users. Second, mainstream social media can encourage users to form different groups to conducting online dating activities, that way users can more easily find dating candidates with similar backgrounds and dating purposes. Users of the same mainstream social media naturally have some common characteristics, which is beneficial to online dating. For example, Zhihu users are generally more educated; Douban users are more inclined to literature and movies; Honor of Kings users are interested in mobile games. Lastly, users' daily activities on mainstream social media can also help them construct a more comprehensive self-presentation without deliberate, allowing their dating partners to know them better and to enhance the sense of authenticity. Some applications directly present users' social media accounts in their dating profiles [63]. However, as we showed in Section 6.1, disclosing users' identities may raise concerns about privacy and security. With more involved collaborations between the LGBTQ platform and mainstream social media, both parties could address the potential issues to provide authentic information without introducing additional risks to users.

7.3.2 Research Community. This paper might inspire future work about the online dating practices of LGBTQ communities in different cultures and countries. During our observations, we found that dating on a Q&A website seems a unique phenomenon in China. We cannot find similar activities on Quora, Yahoo! Answers, or other websites. Previous studies have suggested that in

western countries, for example, in the United States, many users also consider dating applications as hock-up applications [2, 22, 57], and that these applications may not be ideal for finding serious relationships [15, 46, 49, 76]. More seriously, gay dating applications have facilitated crimes and abuses in India because of the disclosed location information and profile photos [7, 59]. However, it is not clear how gay men in other cultures address these challenges. For instance, whether gay men in other cultures and countries struggle to find serious relationships on dating applications and how do they conduct online activities to fulfill their dating needs while protecting themselves from crimes and abuses? Our study can motivate future studies to examine how gay men in other cultures and countries find serious relationships online and how they perceive online dating applications' affordance for online dating practices. Moreover, our findings may inspire the gay communities in other cultures and countries to utilize mainstream social media to find serious relationships.

8   CONCLUSION

In this paper, we studied the online dating activities of Chinese gay men on a non-dating platform. After leaving mobile dating applications, Chinese gay users utilize mainstream social media to fulfill their gratifications, especially social and psychological gratifications. We found that users have perceived the affordances in online dating activities at self, community, and audience levels, which helps them present themselves with more flexibility and diversity and access to ideal audiences. Our work provides potential significance in better understanding the online dating activities of LGBTQ people in different scenarios. Although many cyberspaces are designed for the LGBTQ community, online socialization is still a challenge for the minority group with different cultural backgrounds, which should be further investigated.

REFERENCES

[1]   Giorgia Aiello, Sandeep Bakshi, Sirma Bilge, Lisa Kahaleole Hall, Lynda Johnston, Kimberlee Pérez, and Karma Chávez. 2013. Here, and not yet here: A dialogue at the intersection of queer, trans, and culture. *Journal of International and Intercultural Communication* 6, 2 (2013), 96–117.

[2]   Kath Albury and Paul Byron. 2016. Safe on my phone? Same-sex attracted young people's negotiations of intimacy, visibility, and risk on digital hook-up apps. *Social Media+ Society* 2, 4 (2016), 2056305116672887.

[3]   Baidu Zhishu. 2021. Zhihu user demographic profile. http://zhishu.baidu.com/

[4]   Harold R. Baize and Jonathan E. Schroeder. 1995. Personality and mate selection in personal ads: Evolutionary preferences in a public mate selection process. *Journal of Social Behavior & Personality* 10, 3 (1995), 517–536.

[5]   Bijie Bie and Lu Tang. 2016. Chinese gay men's coming out narratives: Connecting social relationship to co-cultural theory. *Journal of International and Intercultural Communication* 9, 4 (2016), 351–367.

[6]   Jeremy Birnholtz, Colin Fitzpatrick, Mark Handel, and Jed R Brubaker. 2014. Identity, identification and identifiability: The language of self-presentation on a location-based mobile dating app. In *Proceedings of the 16th international conference on Human-computer interaction with mobile devices & services*. 3–12.

[7]   Jeremy Birnholtz, Shruta Rawat, Richa Vashista, Dicky Baruah, Alpana Dange, and Anne-Marie Boyer. 2020. Layers of marginality: an exploration of visibility, impressions, and cultural context on geospatial apps for men who have sex with men in Mumbai, India. *Social Media+ Society* 6, 2 (2020), 2056305120913995.

[8]   Courtney Blackwell, Jeremy Birnholtz, and Charles Abbott. 2015. Seeing and being seen: Co-situation and impression formation using Grindr, a location-aware gay dating app. *New media & society* 17, 7 (2015), 1117–1136.

[9]   Jed R Brubaker, Mike Ananny, and Kate Crawford. 2016. Departing glances: A sociotechnical account of 'leaving' Grindr. *new media & society* 18, 3 (2016), 373–390.

[10] Jin Cao and Xinlei Lu. 2014. A preliminary exploration of the gay movement in mainland China: Legacy, transition, opportunity, and the new media. *Signs: Journal of Women in Culture and Society* 39, 4 (2014), 840–848.

[11] Christopher J Carpenter and Bree McEwan. 2016. The players of micro-dating: Individual and gender differences in goal orientations toward micro-dating apps. *First monday* (2016).

[12] Andre Cavalcante. 2019. Tumbling into queer utopias and vortexes: Experiences of LGBTQ social media users on Tumblr. *Journal of Homosexuality* 66, 12 (2019), 1715–1735.

[13] China Internet Network Information Center. 2021. The 47th China Statistical Report on Internet Development. (2021).

[14] Lik Sam Chan. 2017. Who uses dating apps? Exploring the relationships among trust, sensation-seeking, smartphone use, and the intent to use dating apps based on the integrative model. *Computers in Human Behavior* 72 (2017), 246–258.

[15] Lik Sam Chan. 2018. Ambivalence in networked intimacy: Observations from gay men using mobile dating apps. *New Media & Society* 20, 7 (2018), 2566–2581.

[16] Lik Sam Chan. 2021. *The Politics of Dating Apps: Gender, Sexuality, and Emergent Publics in Urban China.* MIT Press.

[17] Karma R Chávez. 2013. Pushing boundaries: Queer intercultural communication. *Journal of International and Intercultural Communication* 6, 2 (2013), 83–95.

[18] Alexander Cho. 2018. Default publicness: Queer youth of color, social media, and being outed by the machine. *New Media & Society* 20, 9 (2018), 3183–3200.

[19] Kathryn D Coduto, Roselyn J Lee-Won, and Young Min Baek. 2020. Swiping for trouble: Problematic dating application use among psychosocially distraught individuals and the paths to negative outcomes. *Journal of Social and Personal Relationships* 37, 1 (2020), 212–232.

[20] Edmond J Coleman and Wah-Shan Chou. 2013. *Tongzhi: Politics of same-sex eroticism in Chinese societies.* Routledge.

[21] Juliet Corbin and Anselm Strauss. 2014. *Basics of qualitative research: Techniques and procedures for developing grounded theory.* Sage publications.

[22] Mark Davis, Paul Flowers, Karen Lorimer, Jane Oakland, and Jamie Frankis. 2016. Location, safety and (non) strangers in gay men's narratives on 'hook-up' apps. *Sexualities* 19, 7 (2016), 836–852.

[23] Michael A DeVito, Jeremy Birnholtz, and Jeffery T Hancock. 2017. Platforms, people, and perception: Using affordances to understand self-presentation on social media. In *Proceedings of the 2017 ACM conference on computer supported cooperative work and social computing.* 740–754.

[24] Michael A DeVito, Ashley Marie Walker, and Jeremy Birnholtz. 2018. 'Too Gay for Facebook' Presenting LGBTQ+ Identity Throughout the Personal Social Media Ecosystem. *Proceedings of the ACM on Human-Computer Interaction* 2, CSCW (2018), 1–23.

[25] Michael Ann DeVito, Ashley Marie Walker, and Julia R Fernandez. 2021. Values (Mis) alignment: Exploring Tensions Between Platform and LGBTQ+ Community Design Values. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW1 (2021), 1–27.

[26] Chunyan Ding. 2015. Surrogacy litigation in China and beyond. *Journal of Law and the Biosciences* 2, 1 (2015), 33–55.

[27] Nicole Ellison, Rebecca Heino, and Jennifer Gibbs. 2006. Managing impressions online: Self-presentation processes in the online dating environment. *Journal of computer-mediated communication* 11, 2 (2006), 415–441.

[28] Julia R Fernandez and Jeremy Birnholtz. 2019. "I Don't Want Them to Not Know" Investigating Decisions to Disclose Transgender Identity on Dating Platforms. *Proceedings of the ACM on Human-Computer Interaction* 3, CSCW (2019), 1–21.

[29] Andrew T Fiore, Lindsay Shaw Taylor, Gerald A Mendelsohn, and Marti Hearst. 2008. Assessing attractiveness in online dating profiles. In *Proceedings of the SIGCHI conference on human factors in computing systems.* 797–806.

[30] Jesse Fox and Rachel Ralston. 2016. Queer identity online: Informal learning and teaching experiences of LGBTQ individuals on social media. *Computers in Human Behavior* 65 (2016), 635–642.

[31] Karoline Gatter and Kathleen Hodkinson. 2016. On the differences between Tinder™ versus online dating agencies: Questioning a myth. An exploratory study. *Cogent Psychology* 3, 1 (2016), 1162414.

[32] William W Gaver. 1991. Technology affordances. In *Proceedings of the SIGCHI conference on Human factors in computing systems.* 79–84.

[33] David Gudelunas. 2012. There's an app for that: The uses and gratifications of online social networks for gay men. *Sexuality & Culture* 16, 4 (2012), 347–365.

[34] Jeffrey T Hancock, Catalina Toma, and Nicole Ellison. 2007. The truth about lying in online dating profiles. In *Proceedings of the SIGCHI conference on Human factors in computing systems.* 449–452.

[35] Jean Hardy and Silvia Lindtner. 2017. Constructing a desiring user: Discourse, rurality, and design in location-based social networks. In *Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing.* 13–25.

[36] Bettina Heinz, Li Gu, Ako Inuzuka, and Roger Zender. 2002. Under the rainbow flag: Webbing global gay identities. *International Journal of Sexuality and Gender Studies* 7, 2 (2002), 107–124.

[37] Günter J Hitsch, Ali Hortaçsu, and Dan Ariely. 2010. What makes you click?—Mate preferences in online dating. *Quantitative marketing and Economics* 8, 4 (2010), 393–427.

[38] Petula Sik Ying Ho, Stevi Jackson, Siyang Cao, and Chi Kwok. 2018. Sex with Chinese characteristics: Sexuality research in/on 21st-century China. *The Journal of Sex Research* 55, 4-5 (2018), 486–521.

[39] I-Research. 2018. 2018 China Knowledge Marketing White Paper - Taking Zhihu as an Example. (2018).

[40] Hui Jiang et al. 2011. ICCGL: cultural communication via the internet and GLBT community building in China. (2011).

[41] Travis SK Kong. 2010. *Chinese male homosexualities: Memba, tongzhi and golden boy.* Vol. 52. Routledge.

[42] Benjamin Law. 2014. *Gaysia: Adventures in the Queer East: Adventures in the Queer East.* Cleis Press.

[43] Adeline Y Lee and Amy S Bruckman. 2007. Judging you by the company you keep: dating on social networking sites. In *Proceedings of the 2007 international ACM conference on Supporting group work.* 371–378.

[44] Dennis H Li, Shruta Rawat, Jayson Rhoton, Pallav Patankar, Maria L Ekstrand, BR Simon Rosser, and J Michael Wilkerson. 2017. Harassment and violence among men who have sex with men (MSM) and hijras after reinstatement of India's "Sodomy Law". *Sexuality research and social policy* 14, 3 (2017), 324–330.

[45] Yinhe Li. 1998. *Subculture of homosexuality[同性恋亚文化].* 今日中国出版社.

[46] Christian Licoppe, Carole Anne Rivière, and Julien Morel. 2016. Grindr casual hook-ups as interactional achievements. *New Media & Society* 18, 11 (2016), 2540–2558.

[47] Min Liu. 2013. Two gay men seeking two lesbians: An analysis of Xinghun (formality marriage) ads on China's Tianya. cn. *Sexuality & Culture* 17, 3 (2013), 494–511.

[48] Iris Po Yee Lo. 2021. (Dis) Engagement with queer counterpublics: Exploring intimate and family lives in online and offline spaces in China. *The British Journal of Sociology* (2021).

[49] Freddy MacKee. 2016. Social media in gay London: Tinder as an alternative to hook-up apps. *Social Media+ Society* 2, 3 (2016), 2056305116662186.

[50] Mary Madden and Amanda Lenhart. 2006. *Online dating.* Pew Internet & American Life Project Washington, DC.

[51] Elizabeth A McConnell, Antonia Clifford, Aaron K Korpak, Gregory Phillips II, and Michelle Birkett. 2017. Identity, victimization, and support: Facebook experiences and mental health among LGBTQ youth. *Computers in Human Behavior* 76 (2017), 237–244.

[52] Weishan Miao and Lik Sam Chan. 2020. Social constructivist account of the world's largest gay social app: Case study of Blued in China. *The Information Society* 36, 4 (2020), 214–225.

[53] T Mountford. 2010. China: the legal position and status of lesbian, gay, bisexual and transgender people in the People's Republic of China. International Gay and Lesbian Human Rights Commission.

[54] Tiffany A Pempek, Yevdokiya A Yermolayeva, and Sandra L Calvert. 2009. College students' social networking experiences on Facebook. *Journal of applied developmental psychology* 30, 3 (2009), 227–238.

[55] Guilherme Colucci Pereira and Maria Cecilia Calani Baranauskas. 2018. Codesigning emancipatory systems: a study on mobile applications and lesbian, gay, bisexual, and transgender (LGBT) issues. *Journal on Interactive Systems* 9, 3 (2018).

[56] John R Porter, Kiley Sobel, Sarah E Fox, Cynthia L Bennett, and Julie A Kientz. 2017. Filtered out: Disability disclosure practices in online dating communities. *Proceedings of the ACM on Human-Computer interaction* 1, CSCW (2017), 1–13.

[57] Kane Race. 2015. 'Party and Play': Online hook-up devices and the emergence of PNP practices among gay men. *Sexualities* 18, 3 (2015), 253–275.

[58] Ellen Simpson and Bryan Semaan. 2021. For You, or For" You"? Everyday LGBTQ+ Encounters with TikTok. *Proceedings of the ACM on Human-Computer Interaction* 4, CSCW3 (2021), 1–34.

[59] Rahul Sinha-Roy and Matthew Ball. 2021. Gay Dating Platforms, Crimes, and Harms in India: New Directions for Research and Theory. *Women & Criminal Justice* (2021), 1–17.

[60] Statista Research Department. 2014. 1st China LGBT Community Survey. https://www.statista.com/statistics/324787/china-lgbt-community-breakdown-by-education/

[61] Lesa A Stern and Kim Taylor. 2007. Social networking on Facebook. *Journal of the Communication, Speech & Theatre Association of North Dakota* 20, 2007 (2007), 9–20.

[62] Donald S Strassberg and Stephen Holty. 2003. An experimental study of women's internet personal ads. *Archives of Sexual Behavior* 32, 3 (2003), 253–260.

[63] Elisabeth Timmermans and Elien De Caluwé. 2017. Development and validation of the Tinder Motives Scale (TMS). *Computers in Human Behavior* 70 (2017), 341–350.

[64] Matilda Tudor. 2012. Cyberqueer Techno-practices: Digital Space-making and Networking among Swedish Gay Men.

[65] Chad Van De Wiele and Stephanie Tom Tong. 2014. Breaking boundaries: The uses & gratifications of Grindr. In *Proceedings of the 2014 ACM international joint conference on pervasive and ubiquitous computing.* 619–630.

[66] Tess van der Zanden, Maria BJ Mos, Alexander P Schouten, and Emiel J Krahmer. 2021. What People Look at in Multimodal Online Dating Profiles: How Pictorial and Textual Cues Affect Impression Formation. *Communication Research* (2021), 0093650221995316.

[67] Lita Van Wel and Lamber Royakkers. 2004. Ethical issues in web data mining. *Ethics and Information Technology* 6, 2 (2004), 129–140.

[68] Jiangtao Wang, Junyi Ma, Yasha Wang, Ning Wang, Leye Wang, Daqing Zhang, Feng Wang, and Qin Lv. 2020. Will online digital footprints reveal your relationship status? an empirical study of social applications for sexual-minority men. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies* 4, 1 (2020), 1–23.

[69] Shuaishuai Wang. 2020. Calculating dating goals: data gaming and algorithmic sociality on Blued, a Chinese gay dating app. *Information, Communication & Society* 23, 2 (2020), 181–197.

[70] Shuaishuai Wang. 2020. Chinese affective platform economies: dating, live streaming, and performative labor on Blued. *Media, Culture & Society* 42, 4 (2020), 502–520.

[71] Shuaishuai Wang. 2020. Live streaming, intimate situations, and the circulation of same-sex affect: Monetizing affective encounters on Blued. *Sexualities* 23, 5-6 (2020), 934–950.

[72] Mark Warner, Juan F Maestre, Jo Gibbs, Chia-Fang Chung, and Ann Blandford. 2019. Signal appropriation of explicit HIV status disclosure fields in sex-social apps used by gay and bisexual men. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems*. 1–15.

[73] Monica T Whitty. 2008. Revealing the 'real' me, searching for the 'actual' you: Presentations of self on an internet dating site. *Computers in Human Behavior* 24, 4 (2008), 1707–1723.

[74] Shangwei Wu and Janelle Ward. 2018. The mediation of gay men's lives: A review on gay dating app studies. *Sociology Compass* 12, 2 (2018), e12560.

[75] Shangwei Wu and Janelle Ward. 2020. Looking for "interesting people": Chinese gay men's exploration of relationship development on dating apps. *Mobile Media & Communication* 8, 3 (2020), 342–359.

[76] Tien Ee Dominic Yeo and Tsz Hin Fung. 2018. "Mr Right Now": Temporality of relationship formation on gay mobile dating apps. *Mobile Media & Communication* 6, 1 (2018), 3–18.

[77] Nan Zhang and Jing Zhang. 2010. The influence of traditional ethical views on the phenomenon of homosexuality in Chinese and Western history[传统伦理观对中西历史上同性恋现象的影响]. *Journal of Heilongjiang College of Education* 3 (2010).

[78] Xianglong Zhang. 2018. How Should Confucianism View the Legalization of Same-sex Marriage? *INTERNATIONAL JOURNAL OF CHINESE & COMPARATIVE PHILOSOPHY OF MEDICINE* 16, 2 (2018), 53–72.

[79] Zaizhou Zhang. 2001. Aimei de lichen: zhongguo gudai tongxinglian shi/An Ambiguous Trajectory: History of Homosexuality in Pre-modern China.

[80] Tiantian Zheng. 2015. *Tongzhi living: Men attracted to men in postsocialist China*. U of Minnesota Press.

[81] Tianyang Zhou. 2018. Jack'd, Douban Group, and Feizan. com: The impact of cyberqueer techno-practice on the Chinese gay male experience. In *Exploring Erotic Encounters*. Brill Rodopi, 27–43.

[82] Douglas Zytko, Nicholas Furlo, Bailey Carlin, and Matthew Archer. 2021. Computer-Mediated Consent to Sex: The Context of Tinder. *Proceedings of the ACM on Human-Computer Interaction* 5, CSCW1 (2021), 1–26.