

“In My Safe Space”: Social Support for LGBTQ Users in Social Virtual Reality

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ABSTRACT

Virtual Reality (VR) has long been an important research focus in HCI since the 1960s. In the past five years, we have seen a more pronounced rise of VR, especially social VR. In particular, social VR is becoming increasingly popular within the LGBTQ community. Yet, little research explores how LGBTQ users participate in social VR and how social VR has potential to support them by affording a range of inclusive interactions. Based on eight interviews and two months of participatory observations, in this paper we report findings of our preliminary study of LGBTQ users’ engagement in social VR, especially regarding how social VR may afford social support for these users. Our study contributes to better understanding the nuanced experiences of LGBTQ users in social VR so as to create more inclusive and safe social VR spaces for all.

CCS CONCEPTS

• **Human-centered computing** → **Empirical studies in collaborative and social computing.**

KEYWORDS

social virtual reality, social VR, online social support, LGBTQ

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1 INTRODUCTION

Virtual Reality (VR) has long been an important research focus in HCI since the 1960s. However, VR has only recently become available on the mass consumer market. In the past five years, we have seen a more pronounced rise of VR, especially social VR [15]. Social VR refers to a social ecosystem where multiple users can interact with one another through VR head-mounted displays in 3D virtual spaces [13, 25]. Popular social VR platforms such as *VRchat*, *RecRoom*, and *AltspaceVR* are increasingly shifting how people communicate, connect, and socialize with each other in a

more immersive and embodied way [22]. They offer users a more immersive 360-degree space for interaction and allow them to interact via voice, embodied avatars through full-body tracking (i.e., avatar’s movements correspond to one’s physical body movements), and more customized self-presentation through their virtual avatar (Figure 1).



Figure 1: Two popular social VR platforms. AltspaceVR (Left; www.altvr.com); VRchat (Right; www.vrchat.com)

In particular, these unique affordances of social VR seem to attract the Lesbian, Gay, Transgender, and Queer/Questioning (LGBTQ) users as it is becoming increasingly popular within these populations. Despite limited LGBTQ participants, prior research has found that social VR provides transgender (trans) users with an immersive and embodied way to explore, express, and experiment with their gender [13, 14]. Some popular social VR platforms, such as AltspaceVR and Facebook Horizon Beta, also feature regularly scheduled LGBTQ-focused meetups (Figure 2). However, despite the increasing popularity of social VR among LGBTQ users, the small but growing body of research on the experiences of social VR users [3, 13, 18] does not capture their unique experiences, especially on how they participate in social VR and how social VR has potential to support them by affording a range of inclusive interactions. In this paper, we report our preliminary findings of LGBTQ users’ engagement in social VR. Specifically, we ask the following research question: *RQ: How does social VR afford social support for its LGBTQ users?*

2 ONLINE SUPPORT FOR LGBTQ USERS AND SOCIAL VR

Social support is described as a feeling or awareness that one is supported and cared about by others, respected and valued, and part of a social network of mutual assistance and obligations [33]. It is a vital part of the formation of gender and sexual identity. However, LGBTQ people frequently lack social networks to discover, understand, and support their exploration of gender and sexuality [20]. For example, Ryan et al. [29] found that LGBTQ individuals

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Figure 2: Two G-A-Y Meet-up social attendees role-playing ordering food in AltspaceVR.

reported lower social support and general health regardless of family acceptance. It is also challenging for LGBTQ students to find allies and be accepted by their peers and teachers [17].

Therefore, many LGBTQ individuals who cannot receive or find social support in the offline world endeavor to seek it online. Prior research has shown that evolving online social spaces such as social networking sites (SNS) and online gaming/virtual worlds have been pivotal to support the identity development of many LGBTQ individuals [2, 9, 11, 23, 24, 32]. These spaces provide them with safe environments that they can control.

For example, LGBTQ individuals may use various platforms as a sandbox to discover, experiment, and share diverse facets of their identities that they would otherwise not be able to do offline. As Lucero et al. showed, LGBTQ teens have been seen to be more confident in engaging online via social media as a medium to explore their gender and sexual orientation [21]. Craig pointed out that engaging in online social spaces offers LGBTQ individuals an anonymized space to discover their identities, meet people like them, and express their identity online before extending their identities to their offline lives [9]. Previous studies have also investigated how social media could support LGBT parents' online disclosures [4], LGBT users' selective visibility online [8], and transgender and gender non-conforming SNS users' online disclosure of major identity changes [16].

In online gaming or virtual worlds, the use of avatars helps LGBTQ users experiment with entirely new identities (e.g., cross-gender play) or reaffirm existing identities (e.g., queerness gameplay) [19, 28, 34]. Ducheneaut et al. found that users of three virtual worlds (i.e., Maple Story, World of Warcraft, and Second Life) were motivated to customize their avatars to experiment with digital bodies that are often very different from theirs [10]. And others pointed out that users use gender swapping or performance to help form their developing self or to express and experience sexuality in a safe way [12, 19, 28, 34].

In particular, the emerging social VR platforms seem to further support LGBTQ users' social and identity practices beyond what conventional social media platforms or traditional online gaming/virtual worlds could afford. For example, in social VR, the direct connection between one's physical body and their self-presentation is influential for social VR users who struggle with their gender identity [13]. This phenomenon could provide some coherence between the user's gender and sex assigned at birth and alleviate gender dysphoria – a negatively perceived mismatch of the actual (biological) sex and the perceived gender [30]. Engaging in social

Table 1: Interviewee Demographics

Gender	Sexual Orientation	Ethnicity
Cis female - 3 Gender fluid - 2 Cis male - 1 Trans woman - 1 Non-binary - 1	Gay - 3 Bisexual - 1 Lesbian - 1 Pansexual - 1 Queer - 1 N/A - 1	White - 7 Hispanic - 1
Age	Social VR Experienced	Experience of Social VR
ranging from 18 to 23 (mean = 21)	VRchat - 8 RecRoom - 3 AltspaceVR - 1	ranging from 4 to 48 (mean = 20.75 months)

VR even motivated certain trans users to pursue real-life changes regarding their gender [13, 14]. However, these previous studies only involved limited samples of LGBTQ social VR users – e.g., in [13, 14], only four out of 30 participants are transgender, while all other participants are cisgender. Therefore, as social VR may continue to rise as an important online social space for the LGBTQ community, it is critical for HCI researchers to further investigate how exactly this novel technology can afford and support LGBTQ users' unique needs and experiences so as to design more inclusive and safer social VR spaces in the future.

3 METHODOLOGY

This work was approved by the University's Institutional Review Board (IRB) for research ethics. Two types of data were collected in this study. First, we posted recruitment messages on popular online forums for LGBTQ gamers (e.g., r/gaymers in Reddit) and Discord servers for social VR LGBTQ users (e.g., VRC LGBT server on Discord) to recruit participants who are LGBTQ and had experienced social VR for interviews. The first author also attended various events for LGBTQ users in AltspaceVR and VRChat and asked participants' willingness to participate. Social VR users who were interested in participating were provided with an informed consent document through their preference of communication, such as via email or discord message. As a result, eight semi-structured in-depth interviews were conducted from October to December 2020. Table 1 summarizes the demographics of the interview participants. Interviews were conducted via text/voice chat over Discord or within social VR depending on participants' preferences of modality. The average length of the interviews is 56 minutes. To protect participant's safety and privacy, no name was asked and interviews done within social VR were conducted in a private world where only the interviewer and interviewee present. Sample interview questions include: *Are there any unexpected social outcomes for you after engaging in social VR?*; *Have you ever disclosed your gender or sexuality to a stranger in social VR? (how did they react and how did you feel about this experience?)*; *Do you feel engaging in social VR helps you make new friends?*

Second, we conducted participatory observations [7, 26] of LGBTQ users' engagement in social VR. This approach has been commonly used in previous online virtual worlds and MMORPG

research [5, 6, 27]. By employing this technique, the researcher can be assimilated in the environment and observes the experiences, behaviors, and interactions of those around them [1]. To conduct observations, the first author created an account on AltspaceVR and VRchat. He then participated in activities, conversations, and social gatherings in LGBTQ-focused communities and events in these platforms from November to December 2020, such as G-A-Y Talk, G-A-Y Meet-up social, LGBTQ+ and Friends Meetups and Hangouts, to perform participatory observations. Observations generally took place on Monday to Wednesday and Saturdays during the hours of 3-6pm and 9-11pm EST when most LGBTQ-focused events were held. In total, he conducted 64 hours of observation. Screenshots, hand held voice recorded notes, and field notes were captured during periods of observation. The field notes were organized using a spreadsheet, which recorded the date and time of the observation, where the observation took place, and a detailed narration of the activities and interactions observed along with personal insights.

We then used an empirical, in-depth qualitative analysis to code and interpret the collected interview and observational data [31]. First, the first author closely read through the collected data to acquire a sense of the whole picture as how social VR may afford various social support for LGBTQ users and identified thematic topics and aspects related to the research question for further analysis. He also used the field notes from the observations to better understand the social contexts of interviewees' accounts. Second, both authors carefully examined and reviewed the thematic topics and developed sub-themes. Finally, both authors collaborated in an iterative coding process to discuss, combine, and refine themes and features to generate a rich description synthesizing LGBTQ users' perceptions of social support as afforded by social VR.

4 FINDINGS

Using quotes from the participant's own accounts and observations of LGBTQ-focused events in social VR, in this section, we present three themes through which social VR affords social support for LGBTQ users emerging in our data.

4.1 Connecting with Diverse Users in A Manner Similar to Face-to-Face Interaction

As described previously, social VR allows users to experience immersive and realistic interactions comparable to offline worlds through embodied avatars with full-body tracking, voice, and more customized self-presentation using customized avatars. Our participants especially highlighted how these technological uniquenesses supported them in connecting and communicating with diverse users, including other LGBTQ individuals, particularly those in areas where their gender and sexual identities are not well-received. For example, in our observations, we witnessed a group of LGBTQ users from various geographical locations having a conversation about important LGBTQ rights and utilizing body language to communicate in AltspaceVR (Figure 3).

In our interviews, P1 (Cis female, Bisexual, 23, White) also explained that the feeling of both being safe and interacting with others in a face-to-face manner was what motivated her to keep participating in social VR: *"it was those experiences that I did have in those early days that made me want to come back. I can still recall*



Figure 3: A group of LGBTQ+ and Friends Hangout attendees having a discussion using body language.

laughing and smiling, sitting back in my beanbag chair in reality while strangers in a virtual bowling alley tried to toss donuts into my avatar's mouth from a distance like it was some silly game. I don't know any of those people outside of that experience, but it's one I'm never going to forget, and the type that I hope to encounter again." P5 (Cis female, Gay, 22, White) further explained that the perception of other LGBTQ users co-existing in the same room provided her with a supportive and affirming experience: *"the experience of being there with your friend, and being able to interact and see them move around and stuff and just exist in a room with is just very, very wonderful."* For them, the immersive experience of social VR itself is a support to the LGBTQ community, which allows them to engage in rich online social interactions but still comparable to face-to-face communication.

This aspect is especially beneficial for LGBTQ users who are located in places where they are not well accepted or connected; as P6 (Cis female, Gay, 18, White) explained, *"It definitely expanded my social circle, it was pretty small, but now I can talk to different people about different topics, and also meet like-minded people."* For P6, social VR allowed her to find people or communities with similar and different perspectives beyond geographical constraints. P8 (Gender fluid, Pansexual, 21, White) and P5 (Cis female, Gay, 22, White) further added, *"Especially where I live, it's a bit hard when you're gender fluid, and pansexual to find somebody since where I live is not very friendly towards it. So it definitely helps with finding people who are like me"* (P8) and *"you can find communities of people like you that you wouldn't be able to find in real life. Maybe because you just don't have people like you in your area. I think this is specifically, good for LGBT people who may live in an area that's not particularly accepting"* (P5). In this sense, LGBTQ users felt that they could turn to social VR to find other LGBTQ users or people of diverse backgrounds who may well become their social support network, especially if their gender and sexual identity and lifestyles are less or even unsupported in their immediate offline world.

4.2 Engaging in the LGBTQ Community More Confidently through Embodied Interaction

Another way through which social VR supports its LGBTQ users is to make them engage in the LGBTQ community more confidently through more embodied interaction. This is beyond what conventional (e.g., text- or video-based) social interaction platforms or traditional online gaming/virtual worlds could provide.

Almost all our participants mentioned that using full-body tracked avatars in social VR supported their exploration of their identity, making them more confident about themselves online and offline. For example, P7 (Trans woman, Lesbian, 23, White) explained her primary motivation to engage in social VR as: “I started using VRchat so I could try out presenting as a woman, and just see how is that mental image of myself, as well as to find a new social group at the time.” P8 (Gender fluid, Pansexual, 21, White) also added: “The fact that you can look however you want and put myself in the position of a different gender definitely helps with dysphoria and essentially being able to act a certain way and not have people judge you for it is definitely nice.” For both users, using an avatar with their desired gender helped them feel confident in themselves. In VRchat, users can also select a specifically LGBTQ-identified avatar to help them better present and express them in the VR world (Figure 4).

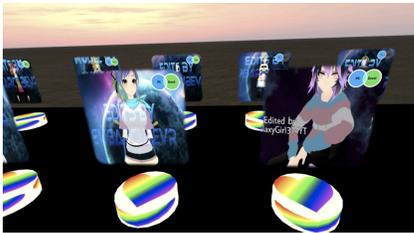


Figure 4: Podiums showing several avatars that one may choose to self-present as an LGBTQ individual in VRchat

In addition, though users can create and customize their own avatar in social VR, they are constricted to using their voice. Therefore, some users also mentioned how the predominant use of voice chat in social VR allowed them to conduct “voice training” (a process to practice manipulating various parts of the vocal tract so that one’s voice would match their gender identity), which was a necessary part of their transition journey. P4 (Non-binary, 20, White) shared their experience, “I’m talking to somebody, and it feels like it doesn’t matter. You feel you’re being perceived the way you want, but it doesn’t affect the conversation or the relationship with this person. There’s a couple of times when I would just use different sex avatars, and I would turn my mic on and go to different worlds to interact with people. So I get blank perceptions from others and that was also important. It was some of the best experiences out there during my transition journey.” P2 (Gender fluid, Queer, 21, White) also added, “Definitely using my voice is helpful rather than just having a chatbox. So real voices help. You know when people are interacting with me, then I can feel that they are seeing and interacting with the person that I am.” To these users, voice became an important part of their online presentation of gender identity because their voice showed the other person who they really were; and social VR helped them better navigate and adjust to this journey in a more embodied way.

Further, for those who cannot speak or prefer to refrain from speaking, including those with voice dysphoria, they could still engage in the LGBTQ community by just using gestures and body language. P5 (Cis female, Gay, 22, White) described how the embodied interaction in social VR helped deaf or mute LGBTQ users stay involved in the community: “ability to use hand gestures is very

surprisingly useful, because there are deaf users who use VR chat and they developed an ASL dialect for VR chat specifically.” In this sense, social VR seems to support the development of a more inclusive and diverse community for LGBTQ users - even those with disabilities could stay connected and interact with others confidently via alternative methods such as gestures.

Our observations also echoed this insight. In one of our observations, a speaker in an LGBTQ-focused social event explained how embodiment in social VR provided them with an assurance that they would feel accepted: “I get to express myself in this safe and comfortable environment. I don’t have to worry about my voice. Because that moment I put on my headset, I put on who I am, my body, and my expression. And then I get to be accepted. If you have a friend [in social VR], that person accepts you for who you are as a person. They accept you as an individual as a human being.” According to this speaker, the embodied experiences afforded by social VR seemed to help LGBTQ users better present them as “a person” and “a human being” (e.g., “put on who I am, my body, and my expression”). This would also help them be better accepted by other people.

4.3 Fostering A Safe Space to Come Out and Build Close Relationships

Most importantly, participants considered social VR supportive to create a safe space to “come out” and thus build close interpersonal relationships. Many have created communities and social circles in social VR to nurture the LGBTQ community to foster a welcoming and inviting space for LGBTQ users and supporters. In these spaces, LGBTQ users can interact with each other and seek social support by listening to others’ experiences and “coming out” stories, answering questions, or just hanging out together. P8 (Gender fluid, Pansexual, 21, White) described such experiences as: “It’s helped me become more confident in myself. And I’m more open than I used to be. It’s helped me find people who are supportive and accepting.”

In our observations, we found that many LGBTQ-focused spaces in social VR were self-regulated (as shown in Figure 5) to ensure that LGBTQ users could feel safe and assured that they would be accepted and supported. Many users also felt encouraged to eventually “come out” in such spaces. For example, P4 (Non-binary, 20, White) recalled their experience of coming out in social VR because they felt safe and comfortable to do so: “I have a group of supportive friends in VRchat. And it was one of the first groups that I came out to. They were really supportive. They make me feel very valid and affirmative. Anyone I came out to and shared my pronouns in VRchat has been very respectful.”

Even parents of LGBTQ individuals came to social VR to seek a safe space for their children. During our observation in an LGBTQ meetup, a father shared his intention to “scout” the meetups and ensure that it was a safe space for his transgender daughter to learn more about herself and interact with others who may share her identity. He was warmly welcomed and supported by other attendees. His efforts to help his daughter was also highly praised by the community.

Father: Hi, everyone! I’m a 46-year-old father, and I am here today to just check out this space, this meet-up. You know, my daughter just came out to be trans. I want to be supportive of her, and I am checking this out to make sure that this is a safe, cool space for her to hang out.



Figure 5: A board showing specific community guidelines for an LGBTQ focused world in Facebook Horizon

Person1: Yeah! Of course, welcome.

Person2: Awww! Can you be my dad?

Person1: Thank you for being a supportive parent. Your daughter is very lucky to have you. If you have any questions, let me know.

This safe and supportive atmosphere is also helpful for non-LGBTQ who are interested in learning more about this community. In one of our observations, we witnessed a non-LGBTQ newcomer came to the LGBTQ-focused meetups and asked what “LGBTQ+” meant. Other attendees welcomed the newcomer and explained the term and the purpose of the meetups. They then engaged in friendly conversations and activities. For both the LGBTQ community and the non-LGBTQ newcomer, this seemed to be a valuable educational opportunity for mutual understanding.

As a result, participants reported that they often gradually established close relationships with other LGBTQ users by engaging in social VR. P6 (Cis female, Gay, 18, White) shared how such friendship and support also extended beyond social VR: “Growing close enough to someone to be able to send them packages in the mail is incredible. I’m thinking, he is a mute, at least in VR, so he doesn’t speak, so I didn’t think that I could become friends with a mute, then now I’m thinking about how we send mail to each other and how we’re sending each other Christmas presents. I’m like, ‘oh wow, that was very surprising.” P7 (Trans woman, Lesbian, 23, White) even commented on how extending such a bond from VR to the offline world was a natural process: “It was just like any sort of long-distance relationship. We both jumped on VR for a while when we wanted to meet up. It was relatively seamless. Just the amount of information conveyed in social VR, and you could just get a lot of body language and kind of get a better sense of who a person is. There’s a certain sense of closeness you have in VR that is hard to get in other online platforms.” For these users, their engagement in social VR was fruitful: they engaged in a safe and supportive online community for LGBTQ users in an immersive way and benefited their offline social networks by building and fostering new close relationships.

5 DISCUSSION AND FUTURE WORK

Similar to LGBTQ individuals’ engagement in traditional (e.g., text- or video- based) social networking sites or online gaming/virtual worlds [2, 9, 11, 19–21, 32], in our study, LGBTQ users reported how engaging in social VR helped them to 1) connect with diverse users regardless of geographical distance; and 2) explore and experiment their gender and sexual identity via avatars. However, our findings

also highlighted three ways social VR can uniquely support LGBTQ users’ social needs and experiences.

First, LGBTQ users can connect and interact with others in a manner similar to face-to-face interaction through social VR. This is a more natural and immersive way of socializing, which makes social VR felt more supportive to the LGBTQ community, especially for those who locate in areas where their gender and sexual identity is less acceptable. Second, social VR affords more embodied interactions using full and partial body tracking and voice. This provides LGBTQ users with a more powerful way to explore their virtual body and engage in multi-modal communication, which not only makes them more confident but also helps the community become more open and inclusive. Third, social VR also seems to foster a safe space for LGBTQ users to come out and engage in building close interpersonal relationships, which benefits their social lives beyond VR.

These findings, therefore, lead to important research questions regarding LGBTQ users’ engagement in novel online social spaces and how to design more inclusive and supportive online social spaces in the future. For future work, we plan to continue upon this current study to recruit more interviewees and conduct longer participatory observations to investigate 1) specific forms of social support (e.g., informational, tangible, and emotional) that LGBTQ users could receive through social VR; 2) the unique role of social VR in LGBTQ users’ construction and perceptions of their self-presentation online; 3) risks and challenges (e.g., privacy and harassment) emerging in LGBTQ users’ engagement in social VR; and 4) how social VR can be designed to further support LGBTQ individuals’ unique social needs. We hope that our study will help HCI researchers and designers improve social VR technologies by better understanding the complexities and consequences of emerging social interactions in social VR so as to create a more inclusive and safe VR space for all.

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