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RESEARCH-ARTICLE

Challenges and Opportunities for the Design of Inclusive Social Media Experiences with LGBT+ Older Adults

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Challenges and Opportunities for the Design of Inclusive Social Media Experiences with LGBT+ Older Adults

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Abstract

Social isolation is a common experience for LGBT+ older adults (OAs) that is often compounded by prejudices of age, sexuality, or gender identity. Little research has explored the specific social needs and barriers that LGBT+ OAs face, particularly in online spaces. To address this gap, we conducted interviews with 10 LGBT+ OAs and an inclusive housing service provider. Our research highlights the importance of LGBT+ community engagement and digitally-supported social networks' role for LGBT+ OAs. We identify challenges such as managing online identity, navigating LGBT+ social media apps and websites, as well as digital disconnectedness challenges among those with lower digital literacy. Recommendations include improving social platforms allowing LGBT+ OAs to manage selective identity characteristics, promoting genuineness and trust in LGBT+ platforms by employing tiered blocking and interest-driven connections, and non-digital outreach strategies for collaborations between LGBT+ organizations and senior centers to engage hidden and isolated LGBT+ OAs.

CCS Concepts

• **Human-centered computing** → *Empirical studies in collaborative and social computing*; • **Social and professional topics** → **Seniors; Sexual orientation**.

Keywords

Older adults, LGBT+, social media, online, social facilitation, qualitative, shared

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1 Introduction

In this study, we provide an empirical investigation for HCI researchers and practitioners situated within the LGBT+ OA community, investigating the important problem of social connectivity (and in turn, social isolation). Social connectivity significantly impacts all OAs' mental and physical health, their sense of belonging, and overall quality of life [36, 59]. Social interactions provide emotional support, reduce feelings of loneliness, and offer opportunities for meaningful engagement and participation in the community [56]. In this context, the swift implementation of digital advancements has broadened the accessibility of technological devices, thereby opening up new opportunities for OAs, and helping them stay connected with family, friends, and social networks, especially when physical mobility and geographical distances pose challenges [46, 56].

It is important we continue to divert the discourse surrounding ageing in HCI away from inability or inaccess, to move away from stereotyped views of OAs. However, it is first necessary to highlight the compounding challenges LGBT+ OAs face due to their dual status as both ageing individuals and members of a marginalized community [77]. These challenges include higher rates of social isolation compared to heterosexual and cisgender peers [35, 61], weaker ties with biological family [35], limited community support networks [77] and as they age, reluctance to seek out new social connections or participate in community activities, due to exclusionary experiences. Additionally, many LGBT+ OAs may have lost partners and friends during the HIV-AIDS epidemic, further diminishing their social networks. The lack of LGBT+ inclusive spaces and services designed specifically for LGBT+ OAs further compounds a sense of invisibility and exclusion [21, 72]. As such, many LGBT+ OAs become further and further excluded from social systems, almost becoming "invisible" from society, thus dubbed: the "invisible generation" [41], who have lost out the most on public service provision, social support and social networking. Nevertheless, chosen families' non-access to legal decision-making for LGBT+ OAs can result in significant legal complexities during e.g. critical health events, limiting the support and advocacy needed at crucial moments [40].

Technology offers solutions to foster social connections for LGBT+ OAs as digital tools are found to be effective in providing more opportunities for events, community engagement and online discussion for OAs in general [46]. Social media specifically offers social connection for OAs, which can reduce feelings of loneliness [23, 80]. However, despite ubiquitous access to social media for younger generations, many OAs still face barriers to accessing and effectively using these tools, including physical disabilities associated with age, varying digital literacy, privacy concerns [13], and the aforementioned social challenges for LGBT+ OAs.

LGBT+ youth, by contrast, benefit from social networking sites (SNSs) designed predominantly for them, as well as through the availability of social support these platforms provide to a younger demographic [60]. As many of these online spaces cater primarily to younger LGBT+ users, the focus is instead placed on dating and casual encounters [15, 92]. While some social media sites aim to support users of all ages [55, 63, 69], design choices within support systems (such as the phrasing on chat interfaces) can exclude OAs whilst other platforms simply may not reflect the intentions or needs of older users, who choose close, long-lasting and "chosen family-esque" relations. This disconnect can leave LGBT+ OAs feeling alienated from both mainstream and LGBT+-specific digital spaces. It is essential therefore, to design social media platforms that are not only user-friendly but also tailored to the unique needs of LGBT+ OAs.

This work has important implications for HCI, which has recently acknowledged a distinct lack of empirical research on LGBT+ OAs [83], by exploring the intersection of ageing, LGBT+¹ identity, and technology. Despite significant prior research outside of HCI highlighting social challenges faced by LGBT+ people and OAs respectively, there remains a critical gap in understanding how challenges for both these populations intersect with the use of technology, and in particular, social media; that enables social connectivity in this group. We contribute an understanding of how LGBT+ OAs can better manage their visible identity ("selective visibility") on SNSs, as well as how SNSs can better embed personalisation and promote a diversity of social interests to encourage LGBT+ OAs' longer-term trust and engagement with these platforms. As such, our study explores this gap and proposes the following research questions:

RQ1: What are the specific social connection needs of LGBT+ OAs?

RQ2: What are the unique challenges of LGBT+ OAs when they use social media for their social life?

2 Related Work

2.1 Individual Exclusion and Discrimination Challenges for LGBT+ OAs

There are three unique challenges we identify in this section, that are formative to our understanding of the socio-technical barriers LGBT+ OAs experience online, including: i) hidden identities, ii) mental health challenges, and iii) self-isolating behaviours. As mentioned, LGBT+ OAs face an array of unique life challenges, shaped by historical, social, environmental, and cultural contexts of discrimination and stigma [77]. It is essential to consider these experiences to not only understand what makes LGBT+ OAs' lives unique, but also the technical challenges that stem from them, preventing digital engagement from these socially isolating issues.

First, many LGBT+ OAs have spent their lives *being hidden* and concealing their sexual orientation and gender identity because of historical discrimination, leading to a disconnect from the community [44]. The act of coming out often involves strategic decision-making and personalized disclosure, varying with each individual's circumstances. Coming out is therefore a continuous process for many LGBT+ OAs and they face ongoing challenges of deciding how and when to reveal their identity as they age [71]. LGBT+ OAs who choose to be more visible may then face additional discrimination, while those who are less visible (who encounter less direct discrimination) can be more likely to suffer from internalized stigma and a lack of social support [77]. The challenges of outing oneself as an LGBT+ OA can be further seen in the context of healthcare, where coming out to service providers risks harassment and inadequate care [14].

Second, numerous studies have also documented high rates of *mental health issues*, such as depression, anxiety, and suicidal ideation, among LGBT+ OAs. For example, Fredriksen-Goldsen et al. [35] found that nearly one-third of LGBT+ OAs reported depressive symptoms, a rate significantly higher than that of their heterosexual counterparts.

Finally, research shows that LGBT+ OAs are more likely to *enact self-isolation* and choose to live alone compared to their heterosexual peers due to a lack of access to safe and inclusive community spaces. This exacerbates preexisting mental health challenges by limiting access to the support that proximity to close others (friends, biological family) provided heterosexual counterparts [86]. There is a need then to position an investigation into social isolation for LGBT+ OAs at the intersection of these factors, to identify ways of enhancing social connectivity.

2.2 Community Connection Challenges for LGBT+ OAs

Whilst the previous section focused on the challenges individuals face to connection, there are also broader social barriers that exclude LGBT+ OAs in different ways. Community connectedness, as experienced by LGBT+ individuals, refers to how connected these individuals feel with other LGBT+ people. Research has shown that having a sense of connection specifically with the LGBT+ community can result in a higher quality of life and greater self-acceptance [87]. OAs in the community, who grew up during key events like the HIV/AIDS epidemic and with restrictive laws limiting their

¹In this study, we use the term "LGBT+" to represent sexual and gender minorities. It is important to note that while the term "LGBTQ+" (including "Queer") is widely accepted today, some OAs in this study expressed hesitation in using it. Historically, the term "Queer" was often used pejoratively, and this negative connotation has created a generational barrier for some LGBT+ OAs [54], making them uncomfortable identifying with it. Consequently, in participant quotes, you may see both "LGBT+" and "LGBTQ+" used, reflecting each individual's comfort with the terminology.

ability to live freely as LGBT+ individuals, often have unique experiences and relationships with the community at large [67]. These experiences, including discrimination and rejection from peers and general society, not only contribute to potential disconnects in LGBT+ community connection, but also to wider negative mental and physical health outcomes, such as increased risks of depression, anxiety and suicide [73].

Additionally, the lack of LGBT+ inclusive social support programs and safe environments further limits OAs' opportunities for social engagement due to heteronormativity, cis-normativity, male-centricity and physician bias in the healthcare setting [21, 72]. The strategies that LGBT+ OAs are forced to use to overcome social connection barriers demonstrate a need for increased opportunity for social engagement to reduce isolation. Therefore, there is an increased need for hybrid social spaces for LGBT+ OAs that connect them (both in the real world and online).

Previous research highlighted how technology can enhance connectedness and inclusion, such as by providing information about the harms of social disconnection and creating accessible community spaces [81, 89]. Therefore, despite these complex and compounded social and physical challenges, there are new opportunities here for technology and in-person services.

2.3 Potential Benefits of Social Media on LGBT+ OAs' Social Wellbeing

Social media has the potential to empower OAs to take the initiative in using digital tools and platforms to maintain and enhance their social connections. Different social media tools have also been widely explored as a means of socially connecting LGBT+ individuals [4, 10, 18, 34], and social media more broadly, is increasingly becoming recognized as a promising tool for facilitating social engagement with OAs about key issues (including social care, personal wellbeing and money matters) [6, 53, 80, 94].

Research has shown that LGBT+ individuals are often more likely to turn to social media sites as a source of engagement than their non-LGBT+ peers [43]. Online LGBT+ communities and SNSs often facilitate the creation of virtual communities and allow users to connect with like-minded individuals, build supportive networks, access identity-affirming content and seek emotional and social support, fostering improved mental health and resilience [24, 42] and confidence in their sexual and gender identities [25, 87]. Moreover, Moitra et al. [65] showed how social media offers opportunities for queer individuals in India, particularly from marginalized intersections of caste, religion, and ethnicity, to navigate their complex identities, create safe spaces, and access critical resources and community care, highlighting the potential of these platforms to support intersectional LGBT+ experiences, such as for LGBT+ OAs.

OAs, more generally, have not always been the target demographic of social media platforms. The number of people aged 65 and older in the United States who reported using social media quadrupled since 2010, with just under 50% of this age group reporting using SNSs [32]. Other studies have examined how OAs actively view these platforms as sites of connection and support [22], citing positive feelings towards social media's simple connectivity for engaging family and friends, as well as sites such as Facebook providing a sense of shared connection and social support

[80]. Recent research has examined improving social media design for OAs, suggesting improvements to accessibility by simplifying functionality, providing increased avenues to connect with others, as well as reassuring users that their data is protected and private [39]. OAs are increasingly involved in pro-social interactions on social media platforms and are actively using these sites to meet their social connection needs.

Whilst research documenting the positive effects of social media on LGBT+ OAs social lives remains limited, Mock et al. [64] found that online forums and knowledge bases serve as a valuable resource for LGBT+ OAs to learn about and engage with diverse sexual orientations and gender identities, e.g. 'hidden identities' following previous heterosexual marriages [16], while social media specifically provides important spaces for expressing self-identity. The same research also found evidence of using LGBT+ focused community sites to build intimate relationships and find potential caregivers, beyond simply engaging in friendly interactions [64].

Given the demonstrated positive impacts of social media on the social well-being of both OAs and younger LGBT+ populations, the potential for using social media to mitigate social isolation and enhancing social connectedness among LGBT+ OAs appears broad. We take this starting point to explore how social media platforms can be more effectively tailored and expanded to meet LGBT+ OAs' individual and community needs and maximize their social wellbeing.

2.4 Potential Challenges of LGBT+ OAs Using Social Media for Social Connectivity

There are several challenges LGBT+ OAs might face when attempting to use social media as a tool for social connection.

Firstly, despite the enormous potential benefit social media technology can bring to LGBT+ OAs' lives, these benefits rely on factors including: i) sufficient digital literacy, ii) access to the internet, iii) willingness to engage with digital services, and iv) the degree to which a person is seeking social connection [45].

It is well documented that more broadly, among OAs, internet access and usage remain lowest of all other age demographics and OAs often underestimate their own technological ability [3]. OAs may often turn to others for computer-related technical tasks, which in turn can limit opportunities to further develop digital literacy, diminishing the likelihood of them engaging with SNSs [66].

Further, concerns around trust and data privacy and security often arise in populations of OAs when looking to use digital platforms, and have the potential to significantly decrease the likelihood of use [62, 85]. Additionally, as individuals enter retirement, reduced social interaction often drives them to SNSs for fulfillment, exposing OAs to cybersecurity risks they may be unprepared for due to limited digital literacy and prior SNS use [66].

Adjacent literature supports this community-knowledge exchange between older and younger LGBT+ generations [8, 28, 76]. Cross-generational communication in digital environments, particularly social VR, reveals opportunities for younger adults and OAs to connect, despite OAs' lower enthusiasm for new technology. However, more research is needed to enhance these interactions on platforms like social media [79].

Moreover, online information can be unwelcoming towards LGBT+ OAs, whether from online harassment or online hate directed at their visible identity online [55, 63, 69]. Mock et al. [64] also found a discontinuity between practice and policy, with LGBT+-friendly social media policies not always being implemented. As a result, LGBT+ people may encounter discrimination or unfriendly experiences even when they are encouraged to engage online, believing they are in an inclusive and protected environment. Moreover, vague platform governance and moderation guidelines can unintentionally harm LGBT+ users by filtering harmless, identity-driven content [84], hindering authentic self-representation and limiting the benefits of SNSs for identity exploration and self-acceptance [20].

Many LGBT+ dating platforms are targeting their support to younger generations within the community, including Grindr, Hinge, HER, Scruff, and Gaydar, with visual identities that primarily afford engagement from younger LGBT+ users through the use of swiping, rewards for repeat engagement with the apps, or explicit (nude) messaging - all of which may be unappealing to OAs due to interactions requiring high dexterity (swiping), one-off engagements and different self-perceptions of their own bodies [7]. For example, the trend of casual relationships among younger LGBT+ generations [15, 92] may not be suitable for LGBT+ OAs as research has found they prioritize close, emotionally meaningful social interactions [31]. Further, applications designed for OAs, such as Senior Chatters and OurTime, predominantly attract heterosexual users and often do not provide the inclusive environment or specific features that LGBT+ OAs seek. As LGBT+ OAs often already feel alienated when searching for intimacy due to a perceived focus on attractiveness and youthfulness within safe community spaces, the limitations of digital platforms in facilitating romantic relationships can be particularly upsetting and limiting for these OAs [33].

These multifaceted barriers therefore point to a need for designing user-friendly social media platforms that are both age-friendly and LGBT+ inclusive, considering the unique social connection needs of this demographic.

2.5 Research Gap

As outlined by [83], a gap exists at the intersection of older LGBT+ community members being represented within HCI research. The first paper exclusively about LGBT+ people in HCI was published in 2014, and since then there has been exponential growth in research mentioning or focusing on LGBT+ people [1, 29, 38, 50, 82]. Furthermore, according to [83], there is a growing trend of community-centred research that emphasises queer perspectives and experiences. The researchers also state that there are gaps in research on specific LGBT+ subgroups and intersections (e.g., lesbians, bisexuals, LGBT+ OAs), explicitly listing the gap of HCI research on OAs as a "glaring omission" of the current corpus.

In light of these challenges, the objectives of this study are to:

- (1) Identify LGBT+ OAs' social connection needs and challenges to comprehensively understand the specific social connection needs (**RQ1**) and existing socio-technical challenges of LGBT+ OAs (**RQ2**).
- (2) To provide qualitative empirical insights and design recommendations to guide the creation of future social media

platforms, to explore how they might be better designed for the social inclusion of LGBT+ OAs.

3 Methodology

3.1 Research Design

For this study, we aimed to understand LGBT+ OAs' needs and barriers to using digital technologies for social connectivity and to explore how HCI researchers and practitioners might better design future SNSs that are inclusive of their needs while considering the barriers they face in maintaining social connections online. This study employs a qualitative approach, integrating qualitative data from semi-structured interviews with ten LGBT+ OAs and one service provider.

3.2 Recruitment

To ensure participants' experiences and insights are relevant and ethically obtained for the study, the following requirements were made for participation: 1) aged 60 or over; 2) identify as part of the LGBT+ community; 3) can speak and write proficiently in English; 4) located in the UK; 5) able to give informed consent.

Recruiting participants for this study involved several strategies due to the challenging nature of reaching LGBT+ OAs: 1) contacting LGBT+ OAs online charities and other organisations, 2) participating in a carers' celebration fair hosted by a local carers group, 3) handing out brochures at the London Pride Parade, 4) snowball sampling of participants, and 5) online recruitment.

Collaborating with local LGBT+ OAs charities and organisations proved to be the most successful method of in-person recruitment, with 5 total participants recruited from the various in-person methods. However, sufficient participants were not able to be acquired through these methods alone. As such, recruitment was supplemented through the use of the online platform Prolific (www.prolific.com), and five additional participants were successfully recruited. We avoided entirely online recruitment, to mitigate experiential biases in the participant sample, where those recruited online may have higher digital literacy; and so, offline, in-person recruitment also took place.

After initial findings revealed the problem of digital disconnectness among LGBT+ OAs, we decided additionally, to expand our recruitment beyond just LGBT+ OAs and seek out service provider perspectives. However, due to time constraints this proved challenging, and only one staff member at Tonic Housing, an LGBT+ senior housing group, was recruited. The researchers initially met the staff member during the OA recruitment phase, where they provided insight into how often LGBT+ OAs at their association use technology, with who and when most commonly. The researchers then decided to reach out to this person for an interview, to explore how these residents maintain social connectivity without digital engagement. This interview was then included as part of our complete data set for analysis with the other OA study participants.

3.3 Participants

In total, 10 LGBT+ OAs aged over 60 years were recruited to take part in an in-depth, semi-structured interview. Among the 10 OAs, 2 (20%) were female and 8 (80%) were male. 1 female and 1 male

reported themselves as bisexual (20%) whereas the rest 8 participants (80%) identified themselves as homosexual. The breakdown of ages above the 60 years cutoff is as follows: (40% 60–64, 20% 65–69, 10% 70–74, 30% 75–79). A further breakdown of participant demographics can be viewed in Table 1.

In addition, the recruited staff member from Tonic Housing was female with an age of 33. This participant had worked as a full-time service provider with LGBT+ OAs for 30 months.

3.4 Materials

The interview topic guides with LGBT+ OAs were structured into four parts: 1) introductory small talk and background information, 2) use of social media for social connectivity, 3) general social connectivity and experiences, and 4) specific social challenges and needs related to their LGBT+ identity. The introduction aimed to establish rapport and explain the purpose of the study while the small talk aimed to build trust, reduce anxiety and ease participants into the conversation, making them more comfortable and open to sharing. The second section delved into participants' use of social media for social connectivity. They were asked questions to identify the types of social media they use to stay connected with others and their previous experience with these tools. The third section focused on social connectivity, especially for participants not using technology for socialization. The questions addressed their current social connections, methods of staying in touch with friends and family, and satisfaction with these methods of staying in touch. The fourth part more specifically explored the challenges and needs arising from their LGBT+ identity.

For the service provider interview, questions focused on understanding their observations and experiences of social connectivity challenges faced by the LGBT+ retirement housing residents with limited or no use of technology, the support strategies employed by the facility, and the staff's facilitator role in mitigating social isolation.

3.5 Procedure

Before the OA interviews, participants were asked to complete an online consent form and demographics questionnaire after being shown the study information sheet. Demographic responses were also collected at the same time, including OA participants' age, gender, sexual orientation, relationship status, and living situation, which helped the researcher better understand the participants' backgrounds. Consent was also collected for the service provider, including their age, sexual orientation, job title, employment type, and service time.

The interviews, each lasting approximately 30 to 60 minutes, were conducted either in-person or via Microsoft Teams or Zoom, depending on the participants' preferences.

After the interview sessions, participants were reimbursed for their time at a rate of £10 per hour. Those recruited via Prolific received cash rewards through the platform with an average of £5, while others were given an Amazon electronic gift voucher.

3.6 Data Analysis

We used an inductive, reflexive thematic analysis for the qualitative interview data analysis process, following Braun and Clarke's revised approach [12]. The data were repeatedly read and iteratively coded using NVivo, with an initial pass to generate 'artificial and interpretative' codes from discussions between the researchers, as Braun and Clarke recommend, and a subsequent pass to consider each code, alter and refine codes and develop overarching themes. Audio recordings were transcribed using MS Word and NVivo and corrected ('cleaned') to remove verbal errors (such as mis-spelled words, pauses and omissions), further embedding the researchers' understanding of the participant data and perspectives. After cleaning, NVivo was used again to build and iterate on codes directly from passages in the transcripts.

Analytic codes were generated through the discussion between all authors on the first pass of the data, without any pre-existing theories but guided by the research questions. The authors then passed each transcript, identifying discussion of social activities (such as mentions of socialising with friends and family), socialising online and interactions between one another, before coming together again to identify new codes relating to this socialisation. Codes were iterated on in a second round to include reflections on participants' needs and challenges from social technology and experiences as part of the LGBT+ community. In the end, higher-level codes were synthesized to systematically identify and refine key themes, highlighting patterns and connections within the data [11].

3.7 Positionality of Authors

We acknowledge that it is important to share our interest and perspectives regarding this work with the HCI community and as such, to acknowledge our positionality in conducting this research.

First, none of the authors were OAs (aged 60+ in the UK) at the time of writing this study. All are cisgendered with one male and three female authors. The first, second and third author self-identify as members of the LGBT+ community and all felt comfortable seeking out connections with LGBT+ organisations to support this work.

Notably, the first, second and third researchers who conducted the analysis acknowledge our subjectivity within the data collection and analysis process and how, being members of the LGBT+ community ultimately impact our presentation of the data in this work. The second author reached out to community connections and contact details of local LGBT+ organisations and charities (including the group collaborated with in this work), to aid in participant recruitment and data collection. The authors did not openly disclose our LGBT+ status as part of the interview procedure, but equally did not avoid these conversations if they arose during interviews.

3.8 Ethical Considerations

The study had Ethical approval from the University College London Interaction Center Research Ethics Committee. Before the interview section, all interview participants were provided with an information sheet detailing the project and were asked to consent to the use of their data by completing the electronic consent form. Any identifiable details were removed from the transcripts to ensure confidentiality and all participants were given a participant ID.

Table 1: Demographic Information of OA Participants

Participant ID	Age	Location	Gender	Sexuality	Relationship Status	Living Situation
P1	76	London	Male	Gay	In a relationship	Living with partner/spouse
P2	68	London	Female	Bisexual	Single	Living alone
P3	79	London	Male	Gay	Widowed	Living alone
P4	61	London	Male	Gay	In a relationship	Living alone
P5	72	London	Male	Gay	Widowed	Living with friends/roommates
P6	63	North East	Male	Gay	Single	Living alone
P7	65	London	Male	Gay	Single	Living alone
P8	60	London	Female	Lesbian	Married	Living with partner/spouse
P9	62	London	Male	Bisexual	Married	Living with partner/spouse
P10	78	South East	Male	Gay	Divorced	Living alone

4 Findings

Five overarching themes were identified in this study. Two themes relate to the social needs of LGBT+ OAs: i) Importance of LGBT+ Community Engagement, and ii) Balance between LGBT+ identity and Broader Social Connections. Three themes pertain to their unique challenges in using existing social media platforms for social life: iii) Impact of LGBT+ Identity on Online Engagement and Self-Moderation, iv) Appropriation of Current LGBT+ Social Media Platforms, and v) Digital Disconnectedness and Social Isolation. This section reports on these themes, with P# used as a participant identifier for OA participants and S1 for the service worker participant.

4.1 Social Needs of LGBT+ OAs

The findings from the interviews highlight the dual social needs of LGBT+ OAs: engagement within the LGBT+ community and maintaining broader social connections. Section 4.1 delves into these social needs, providing essential contextual background for Section 4.2, which delves into the unique challenges these individuals face when using social media to support their social lives.

4.1.1 Importance of LGBT+ Community Engagement. Engagement within the LGBT+ community plays a significant role in the social lives of these OAs. All participants reported their social connections with the LGBT+ community through either maintaining relationships with LGBT+ friends, joining LGBT+ social groups, or living at an LGBT+ OAs housing association. These community engagements provide a sanctuary from the judgment and assumptions they might face in broader society, enabling them to build meaningful, supportive relationships that affirm their identities.

Firstly, the importance of community engagement for LGBT+ OAs is evident in the way they integrate their LGBT+ friends into their lives. For many, these friends are not just social contacts but integral parts of their daily existence.

P2: “It [LGBT+ community] has been part of my life since I was 17. It’s not something I set out to do to make contact. People who are lesbian and gay, transsexual and bisexual are part of my community, part of my friends, part of the people I connect with and part of my life.”

Additionally, maintaining connections within the LGBT+ community provides a sense of belonging and comfort as participants felt that they did not have to explain their relationships or identity. Participants highlighted the importance of this sense of ease as it contrasted sharply with the frustration they felt towards the default assumptions of heterosexual identity they encountered in broader societal contexts, especially in healthcare settings. For example, one participant mentioned the added stress and emotional labour that they endured when they were forced to constantly clarify their identity.

P8: “When I had my stroke... I was being whirled into an MRI... The doctor said to me, “What’s your boyfriend’s name or your husband?” ... I’m sick. I don’t even know where I’m gonna die and I have to come out.”

Therefore, it becomes important for them to socially interact in a non-judgmental environment shaped by their shared experiences. Participants highlighted their social need for this environment and their positive experience with this environment of respect. Participants valued the LGBT+ community which provided a space free from societal judgment, where sexuality and diverse lifestyles were embraced.

P9: “Very positive. There is less judgement. That’s the key point. There is no judgement with regard to homosexuality or sexual. Unusual sexual interests are respected... We just live the way we want to live. So it’s a very liberal open-minded.”

Moreover, many participants expressed a strong preference for interest groups and activities specifically organized by and for LGBT+ individuals over their heterosexual counterparts. One participant explained how LGBT-specific groups provided not only a sense of belonging but also opportunities for deeper connections, whether romantic or social. They explained that they would be willing to travel significant distances to attend LGBT+ activities, underscoring the desire of connecting with individuals who share both similar experiences and interests in a safe, inclusive space.

P5: “I would prefer that [joining Yoga classes with specific people who’s in the LGBT+ community] ... It’s quite nice to be in a gay-only community... You might get a date out of it... If there’s a lesbian/gay version, I’d

go to that... I'd go quite a long way to be in a [LGBT+] group."

4.1.2 Balance between LGBT+ Identity and Broader Social Connections. Despite the essential role of LGBT+ OAs' social engagement with the LGBT+ community, this was not the sole support system of their social connections. Balancing LGBT+ social life with broader social connections was a nuanced process for many OAs. The level of reliance on this community could vary significantly based on individual circumstances, such as the presence or absence of family support and individual personalities.

The role of family in social life was significant, especially for those who have children and grandchildren from previous heterosexual relationships. These family connections often provide a sense of stability and reduce feelings of isolation.

P6: *"It [LGBT+ community] is important to me because of who and what I am, but it's not all for me. I'm very lucky that I've got my family, which a lot of LGBT+ people don't have."*

Additionally, some participants highlighted the necessity of balancing social engagements with personal time, as it was essential for recharging and maintaining personal well-being. This indicated that while community engagement was vital, personal time was equally important.

P6: *"I'm a very sociable person, but I also need lots of me time as well."*

Several participants also emphasized the importance of maintaining friends from earlier stages in life. Some emphasized the importance of maintaining deeper, long-lasting relationships over superficial online connections, indicating a preference for quality over quantity in their social connections.

P9: *"When I went to college, I had a roommate and I'm still in touch with that person... Having 100 or 1000 online friends are not the friends you really have a relationship with. But when it comes to who you have a relationship with, that's what counts to me."*

Participants highlighted the role of social media platforms in helping them reconnect with and maintain old relationships. For some, these platforms provided opportunities to rediscover meaningful connections from earlier stages in life, such as former classmates or college roommates.

P7: *"I actually belong to an online group of alumni from my old school and thanks to that group, I actually found out about a centenary event at my old school, which took place last month."*

Proactive involvement in all different other social activities such as writing group (P2, P3), and TaiChi class (P5) also indicated how they balance LGBT+ and broader social connections to improve their social life and reduce loneliness. This suggests that their social lives consist of a variety of activities, both driven by their LGBT+ identity and their personal interests.

Moreover, the service provider at the LGBT+ OAs' retirement housing also mentioned a variety of activities they arranged for the older residents there to promote diverse interactions and reduce the potential for isolation. These activities not only cover a broad

spectrum of interests but also integrate the community with broader social networks and other generations.

S1: *"I arranged activities and events, whether it's day-time evening time, afternoon time, weekends, anything intergenerational, or with other local or neighbouring boroughs that have LGBTQ+ offers of their own, whether that be within entertainment purposes or well-being health, fitness, all of the across the board."*

In summary, while the LGBT+ community provided crucial support for OAs, their social well-being was often enhanced by a balanced approach that included family, personal time, and diverse social activities. This multifaceted approach allowed them to maintain a rich and fulfilling social life, reducing loneliness and enhancing overall well-being.

4.2 Unique Challenges of Using Social Media for LGBT+ OAs' Social Life

Although participants recognised that social media could connect them with the outside world and reduce isolation by maintaining existing relationships, reconnecting with old friends, and expanding social networks, several challenges in using these social technologies were revealed during the interviews.

Many participants exhibited skepticism towards AI and other advanced technologies, feeling unsure about their reliability and benefits, e.g. *"I think it [AI] is very seductive... I have no intention of doing it. Firstly, I don't trust it. Secondly, I don't want it on my computer spreading its tentacles around the place"* (P2). This skepticism extends to social media platforms, where there is a concern that these platforms are not effective in maintaining and forming meaningful friendships, e.g. *"Has any of those apps helped me to find a new friend to communicate with an existing friend? No. None. Nothing"* (P9).

Additionally, some participants mentioned general usability and accessibility challenges using social media, similar to those experienced by heterosexual OAs. For example, participants expressed the challenges of navigating through the *"more complex"* (P1) and *"over featured"* (P4) mainstream social media they are using to stay socially connected, e.g. *"The mechanism of setting up [events on Facebook] always feels a bit clunky"* (P7). The staff participant also mentioned some of her residents think *"[the interactions with social media] are too mind-blowing"* (S1) and *"[the OAs] need simplified technology, like kid's pad with big buttons"* (S1). Accessibility issues were also often mentioned by participants, such as their preference for larger interfaces, which are *"easier to see everything and type quickly"* (P1) and *"less arduous and less of a strain"* (P4). These challenges can consequently lead to the difficulties of adopting new digital tools.

In addition to the common usability and accessibility issues LGBT+ OAs encounter with social media, this demographic also faces unique challenges relevant to their LGBT+ identity. The following subsections delve into these unique challenges, exploring how they shape the online social experiences of LGBT+ OAs.

4.2.1 Impact of LGBT+ Identity on Online Engagement and Self-Moderation. The different types of self-identity that LGBT+ OAs

hold within the community significantly influences how they engage with LGBT+ content and communities online. The impact of LGBT+ identity on online engagement is multifaceted, with many individuals expressing concerns about being judged or discriminated against online. These concerns about judgment and quiet discrimination often influence their active adjustments of online behaviours when considering how openly they express their identities on social media. It highlights the pervasive worry among LGBT+ OAs about negative reactions from a broader, potentially unsupportive audience.

P4: *“When I was on Facebook, I would think about what I’m liking and what groups I’m joining. Some of my clients at work in countries that are pretty conservative about LGBT issues... I’m pretty thoughtful about that because I was aware that my clients would have some knowledge of other people and draw conclusions whether they were correct or not. There’s still prejudice and bias out there... I’m kind of reserved in general... I’m just aware that things can be misconstrued or perceived to be negative by some people.”*

LGBT+ OAs also reported changing their online engagement passively because of the negative or unwanted interactions received because of their LGBT+ identity. Risks and emotional toll can be associated with being openly LGBT+ online. Some participants indicated a change of their online strategies to minimize exposure to these interactions, highlighting a self-protection mechanism to avoid mental distress by limiting engagement with potentially harmful content. Some individuals are passive observers who prefer to observe from the sidelines and do not actively interact with LGBT+-related content online. For example, one participant mentioned they used to be very public about their homosexual marriage until they received negative messages. This affected their online engagement from an active engager to a passive observer.

P8: *“when you come out like that and start talking about it on social media, you get a lot of hate and I just switched it off. I just block now... I don’t engage. I don’t want to mess my mind up. So I try to look at the good stuff... We used to [post things related to our marriage], but not really anymore... I don’t get into any debates about anything online or about our community, nothing.”*

Another notable self-protection strategy reported in the interviews involves maintaining two separate Facebook accounts - one for LGBT+ friends and another for other friends and family. This approach helps to manage distinct social circles and avoid potential conflict or discrimination. This “double life” strategy reflects the complex balancing act that LGBT+ OAs perform to maintain their social connections within the LGBT+ community while simultaneously protecting their relationships with other non-LGBT+ friends and family. This careful navigation is essential to avoid potential conflicts and tensions that may arise from differing perceptions.

P1: *“There were times when I was afraid that some of the comments that gay friends made would appear to family and although all my family are um gay friendly some of the things are just not appropriate so that’s why I have that [two Facebook accounts]...”*

Blocking is one of the most often used features for these LGBT+ OAs to adopt their protective online engagement strategy, e.g. *“[If anyone] puts up homophobic things, I just unfriend and unblock them”* (P3). However, several participants reported their skepticism about the effectiveness of this function. They showed frustration and uncertainty about the real impact of reporting and blocking mechanisms.

P8: *“No [blocking feature on social media is not effective enough]. It’s effective for one or few days and then I get scams all the time. I just delete block delete block everyday.”*

4.2.2 Appropriation of Current LGBT+ Social Media Platforms. Besides joining LGBT+ social groups online or offline, many participants also mentioned using dating apps designed for the LGBT+ community to enrich their social life, such as Grindr, Gaydar and Romeo. However, the use of current LGBT+ apps among OAs presents several unique challenges, particularly concerning genuineness, suitability, and effectiveness.

One of the primary concerns was the genuineness of online profiles and interactions. Many participants reported their disappointment when they tried to seek genuine relationships and friendships but often encountered individuals looking for casual and unserious (sexual) relationships.

P1: *“A lot of the people who ask to be friends will then send you images of various parts of your body... If you like friends rather than somebody who wants sex or internet sex and then it all goes quiet because they were hoping for something that’s not what I do.”*

Another participant shared their skepticism about the overall reliability of dating platforms, emphasizing the prevalence of false profiles and insincere users. Therefore, it can be a time waste for these OAs to detect their true intentions. This sheer volume of disingenuous interactions can discourage genuine users from engaging with these platforms, reinforcing a cycle of mistrust and disengagement.

P7: *“I just find that they [dating apps] are inhabited mostly by a lot of time wasters, and probably false profiles. So if you are a genuine user and maybe want to meet someone, I’m actually not sure it’s a particularly great way to do it... I think the proportion of genuine users is actually quite low.”*

The mismatch between the expectations of OAs and the trends on these apps possibly result from their primary focus on younger users, rather than catering well to the older age group. The focus of these apps on facilitating casual relationships rather than meaningful connections further alienates participants, many of whom expressed a diminished interest in casual sexual relationships and a greater desire for forming lasting connections. This suggests a need for more versatile and inclusive social media options for these LGBT+ OAs.

P4: *“I think Grindr has its reputation of being hook up focused, and least in my mind. And that’s not really what I was looking for.”*

The anonymity of LGBT+ users’ identity was another concern that participants highlighted about using these LGBT+ apps. They

mentioned that this anonymity allows anyone, regardless of their true identity or intentions, to join these apps, which can lead to negative experiences such as harassment, discrimination and a lack of trust. These potential negative experiences contradict the apps' intended purpose of providing safe and inclusive spaces for LGBT+ individuals.

P4: *"How do you control for that [LGBT+ identity]? Because anybody could sign up... I think you can assume any kind of identity... It's so easy to just be anonymous or drop these negative comments... I think if it were tied more to real people's identity, somehow, it would be less toxic."*

Besides blocking negative comments reported in section 4.2.1, participants also revealed that they blocked messages that appeared like they would lead to an encounter they did not want, e.g. (one that was sexual or fraudulent) *"now people will just message me, 'Are you free now?' Kind of thing, and it's like instant block"* (P6).

However, participants also reflected frustration with the process of blocking unwanted content on digital platforms. Even though blocking is available, users must still see unwanted content before initiating a block, which causes them discomfort. Participants' dissatisfaction highlights how current blocking features fail to prevent initial exposure to harmful interactions:

P8: *"Yeah, correct [even though you can block them... you can still see the messages, so it can annoy you in some ways]. Yeah, they're not filtered very well."*

Moreover, a participant expressed interest in an advanced AI-driven blocking feature on the SNS that they were using, that would allow them to customize their blocking preferences for specific types of content. In this case, their dissatisfaction came from the lack of transparency around how they could personalise the tool for their blocking preferences. This calls for a need for more user-centred blocking features that allow individuals to have direct input into the filtering criteria, giving them a greater sense of control.

P1: *"If um the so-called intelligence is actually artificial, which is a very important word... If I can feed into the algorithm and say 'send me friend requests of people wearing clothes', that's simple. But AI doesn't allow you to input into that."*

Despite these challenges, there are aspects of LGBT+ dating apps that are appreciated by older users. For example, one participant liked the convenience of specifying preferences, such as age and interests, which is seen as a positive feature, *"The most fun ones are obviously the gay dating sites because you can see pictures, and so on... In the past, if you went to a bar, you had to negotiate with the person... Whereas now you can actually write all [preferences] down."* (P5). This convenience is different from their old way of meeting people at a physical place, which helps streamline the process of finding compatible matches and reduces the potential for awkward or mismatched encounters.

Additionally, one participant expressed a desire for a more integrated LGBT+ platform that goes beyond dating. They highlighted the need for a comprehensive digital space that includes everything tailored to the diverse needs of the LGBT+ community.

P7: *"It [local LGBT+ online platform] was a really good website, because it kind of combined the best of all the others into one place. So it did real-life events. It had forums. It kind of had everything all in one place... That was probably the best social media type online experience I've ever had actually."*

However, another participant expressed skepticism about the effectiveness of such an integrated platform limited by the diverse needs and preferences within the LGBT+ community. This highlights the complexity and potential challenges in designing a single platform that can adequately cater to different subgroups within the LGBT+ community.

P1: *"No, it [an integrated app] would not help because people want an app that's for them... We have mixed LGBTQ meetings, but the women say, 'oh no, I don't want to come if there are too many men.'... There are a few, particularly younger around 50, trans people who don't want to be with the older people."*

4.2.3 Digital Disconnectedness and Social Isolation. Digital disconnectedness is a significant challenge for all OAs and especially so for older LGBT+ adults, leading to ingrained social isolation despite the availability of social media technologies. Those who are not tech-savvy tend to be invisible in the digital world.

This is especially the case for the OAs who do not prominently display their LGBT+ identity to the public, potentially due to privacy concerns and fear of discrimination. This invisibility makes it difficult for them to engage in the communities of people with similar backgrounds and access the social support they need. Moreover, these individuals are often overlooked by online LGBT+ organizers when fostering community-building efforts.

One participant who is an LGBT+ OAs' group organizer discussed what they perceived to be barriers within this digitally disconnected group of LGBT+ OAs. They specifically highlighted several significant challenges in identifying this population who may be "hidden" within the community. This lack of visibility makes it challenging for community organizers and support groups to reach out and provide the necessary resources and support, either offline or online. Therefore, there must be a deliberate effort to proactively reach these individuals and provide them with information and resources that might draw them out of isolation.

P1: *"The counsellors say we can't find them, the officers say we don't know who they are, and the social workers aren't allowed to identify people as gay - it's part of the code of conduct. Unless somebody says, 'Please tell everybody that I'm gay,' they're not allowed to tell us... If you run a support group and you'll get the people who are pretty readily socialized. What we've worked out is if we want to attract the people who are hidden in the community, we need to feed them [relevant information/support]."*

OAs' lack of digital literacy and reservations about their LGBT+ identity often lead to their social isolation, and this social isolation from the community further creates barriers for them to learning and adopting new technologies with no one around to provide digital literacy training. In turn, this becomes a vicious cycle for

both the invisible LGBT+ OAs to stay isolated and the support people to provide help to them.

P1: *"I think the biggest problem I have is I can't find people who are not digitally connected... The people who've withdrawn from community don't have friends who can induct them into how to use a computer. They don't know how to use a computer... It [events updated on social media] won't reach the people who don't use Facebook because they don't have a computer."*

Consequently, this can result in worse mental health conditions for LGBT+ OAs, with P1 adding: *"They're probably anxious, depressed, and at high risk of suicide"* due to becoming so socially isolated. This participant reported making efforts to approach and engage digitally disconnected individuals by proactive and intentional efforts: e.g. *"We just tap into the South Asian community [to give LGBT+ awareness talk], and from there to other groups."* and *"Getting all the mailing lists from people all over London and we're putting it all together into a calendar which we're going to publish."* (P1).

However, digital exclusion doesn't always equate to social isolation, especially in environments where there is strong community support, peer networks, and proactive staff involvement. The participant who is a service provider at an LGBT+ retirement housing reported residents in the LGBT+ retirement housing appear to stay socially connected despite their digital exclusion.

Firstly, this participant mentioned the proactive role of staff in providing non-digital alternatives and digital assistance to ensure that these residents remain informed and engaged of the social activities within the community: *"For the ones that don't have the smartphones or tech to get involved... I create paper flyers and paper diaries for all the activities... I also use the notice board as a means of updating them on what's happening at Tonic Housing and around us in the area."* (S1). The staff also described herself as a *"yellow book"* (S1) which answers and solves the technical problems from those residents who have little technology understanding in the LGBT+ housing, such as *"how to use the smart TV"* and *"help to book tickets of an event they want to go"*.

Besides support from the staff, peer support within the LGBT+ housing further reinforces the resilience of this community against the challenges of digital exclusion. The staff reported that several residents who were more technologically proficient *"are really open, willing and happy"* (S1) to assist those who struggle with technology, reducing dependence on staff.

Additionally, the staff observed many of the digitally disconnected residents in the LGBT+ housing had strong social networks and routines established before moving in, which continue to sustain their social engagement. These pre-existing connections and habitual participation in community events compensate for their lack of digital engagement.

S1: *"They [LGBT+ OAs] already have really good outside LGBTQ+ connections in the borough of Lambeth, Westminster, Greenwich, Lewisham, where they've already historically made connections and go to their events as well... so the ones we have at present are not missing out on social, they're actually some of our most social*

residents because of their outward outreach links that they did before coming to Tonic Housing."

Furthermore, the staff mentioned some residents remain resistant to adopting digital tools despite the availability of support the housing community offers: *"They're so rigid about the whole [technology] concept... I've had an offer from a charity that offers tech support, but the residents can't be bothered."* (S1). The staff perceived that many residents prefer *"the connection of seeing and meeting people"* and *"gravitate to human experiences"*, and are resistant to digital alternatives in which *"a computer battery can die, signal can go and a lot of them have hearing matters"* (S1).

In conclusion, while digitally disconnected LGBT+ OAs who are reserved about their LGBT+ identity are more likely to face severe social isolation - those in LGBT+ retirement housing demonstrate that a strong, supportive environment can mitigate many of these challenges, enabling residents to maintain active social lives without relying on digital tools.

5 Discussion

The findings from our study suggest four key design opportunities for SNSs and beyond to enhance social connectivity for LGBT+ OAs, that we build upon in this section with recommendations for SNS platform researchers and designers in HCI and beyond.

5.1 Supporting Selective Visibility of LGBT+ OAs

Participants managed their "selective visibility" (which is the ability of an LGBT+ individual to control how visible their identities are [17, 75]) in different ways. P6, P7 and P9 demonstrated a strong need for social connections within the LGBT+ community whilst also seeking broader social connections beyond their LGBT+ identity, depending on their personal circumstances and interests.

However, P1, P4 and P8's experiences illustrate how concerns regarding judgment, discrimination, and privacy of their LGBT+ identity influence their behaviours when maintaining these relationships online. Similarly to previous research on how LGBT+ youth employ strategies to curate audiences and manage privacy [17, 19, 25], our findings show that LGBT+ OAs also adopt various approaches to manage their online presence, including:

- (1) *selective engagement*: limiting interactions to content that does not reveal their LGBT+ identity (P4),
- (2) *passive observation*: reducing active participation to avoid negative judgments (P8), and
- (3) *multiple profiles*: creating separate accounts to manage distinct aspects of their social lives (P1).

Given these findings and the public-by-default nature of existing social platforms which often over-share users' actions [17], we suggest a need for social platforms that prioritize privacy and allow for nuanced control over identity visibility. Light [58] advocates for design principles that empower users to subvert traditional structures and "do not hamper the evolution of variety" or dictate how people must manage their digital content and identities; thus giving people more control over how they present themselves online. Light's concept of "obscuring," which involves intentionally hiding user activity, is particularly relevant to LGBT+ OAs who may be

wary of being fully visible online due to concerns about discrimination or judgment. Building upon this concept, Carrasco and Kerne [17] suggest that rather than requiring users to opt-out of certain features, systems could default to obscured settings, where users' activities are hidden by default, allowing them to opt-in only when they feel safe to do so. This type of privacy management can be especially useful for LGBT+ OAs with limited digital literacy who struggle to navigate settings for controlling the visibility of their identity. Having default obscured settings makes identity management safer, which can potentially encourage platform engagement and reduce the likelihood of withdrawal due to concerns about identity exposure. However, not all LGBT+ OAs want to hide their identities online. Given the challenges related to digital literacy, it is crucial that future platform designs for LGBT+ OAs incorporate supportive features to ease the learning curve. Morrison et al. [66] found that without continued access to formal technical support after retirement, many OAs experience decreased confidence and increased anxiety around technology. Therefore, future research should explore such design principles, ensuring user autonomy without adding unnecessary complexity for OAs who may want to change default settings.

In contrast, Armstrong et al.'s [2] concept for "smart social circles", allows users to create multiple private audience lists on platforms like Instagram, with AI suggesting relevant lists based on past behaviour and interactions. While this AI-assisted feature could possibly make identity management more intuitive and reduce the cognitive load associated with manually setting up and maintaining multiple lists, our study showed that LGBT+ OAs' concerns can range from distrust in the reliability of AI to fears of losing control over the nuances of their digital presence (P2). Therefore, designers could investigate the creation of familiar visual cues such as the option to use multiple profiles within the same platform (P1). Although many mainstream social media platforms now allow for the creation of multiple profiles, some, like Facebook, only permit multiple profiles within the same account rather than fully separate accounts. This unintentionally impacts LGBT+ OAs more than their heterosexual counterparts, as this can expose connections between profiles, where their contact information or other identifying details may be shared. There is an opportunity for designers and HCI practitioners to responsibly innovate here, allowing for fully independent profiles that do not share any underlying connections, ensuring that LGBT+ OAs can maintain distinct social identities unlike non-LGBT+ OAs, without the risk of cross-profile discovery.

These design implications highlight the need for social platforms that prioritize privacy by offering default obscured settings and independent profiles, allowing LGBT+ OAs to manage selective identity visibility safely and intuitively without adding complexity. Simplified platform tools over complex algorithmically-driven privacy solutions should be prioritized to provide additional reassurance for LGBT+ OAs that their identities are not being mis-used to train such algorithms without their full awareness.

5.2 Promoting Authenticity and Trust on LGBT+ Dating Apps for LGBT+ OAs

While applications specifically designed for the LGBT+ population can provide safe spaces for LGBT+ OAs' identity, they are often perceived as lacking in genuineness, suitability, and effectiveness for this age group [5, 74, 91]. Our findings suggest a significant disconnect between the expectations of LGBT+ OAs and the predominant culture on these platforms; specifically, P4 and P7's accounts indicating their frustration towards the predominant casual hook-up culture of current LGBT+ dating apps [83] and how it is increasingly difficult to find genuine relationships or lasting friendships, as these platforms have become saturated with superficial or sexual interactions and false profiles. This aligns with prior research that identifies the prevalence of casual and ephemeral relationships on LGBT+ dating apps [15, 92], where these mismatched expectations can lead to negative experiences for older users seeking deeper connections. P1 also reported receiving unsolicited sexual images, which aligns with studies showing how non-consensual content can drive users to abandon such platforms [27]. Additionally, we also found that while anonymity offers safety, it also enables deceit and harmful messages. Therefore, there is a need to promote serious and genuine relationships and friendships on these dating apps, that further promote inclusion [26].

While platforms could implement stricter censorship of sexual content, Tiidenberg [84] discussed how sites like Tumblr have over-moderated NSFW content, leading to de-platforming of users who find it a safe space for sexual expression and community. Therefore, a more balanced approach is needed such as "sex-positive platform governance", suggesting protecting sexualised content without over-commercialization, while also ensuring that those seeking non-sexual interactions are adequately supported [84]. Similarly, previous research has found unfairness towards censorship of particular groups such as trans people [47] and LGBT+ disabled users [52], with content moderation systems that frequently exhibit gray areas disproportionately impacting marginalized groups. Therefore, designers should consider subtlety in moderation that can cater to diverse user needs rather than attempting a one-size-fits-all moderation approach to content.

As P3 and P6 described, blocking is frequently used to reduce unwanted interactions such as discriminatory comments or sexual messages. However, participants indicated their frustrations towards this feature, highlighting SNS tools' failure to prevent initial exposure to harmful interactions (P8) and lack of customization to align with individual user needs (P1). Therefore, improving the effectiveness and flexibility of blocking tools could be critical in creating safer and more fulfilling online environments for LGBT+ OAs. A design example by Armstrong et al. [2] shows advanced blocking features which allow users to manage how they receive sexual content - users can either block such content entirely or choose to blur it until they consent to view it. Additionally, they implemented bi-directional filters that not only display profiles aligning with the user's preferences but also restrict their visibility to others based on those same criteria. These approaches have been positively received by LGBT+ users as they ensure their preferences are fully respected and clearly communicate their expectations to other users [2, 9, 88]. Such features for blocking sexual content could be

further tailored to detect other unwanted content such as harmful messages or spam. Currently, Large Language Models (LLMs) are frequently used by designers to develop these “smart” moderation tools. For instance, PressProtect [49], an interface designed to assist journalists in managing online harassment, categorizes and conceals toxic content based on the relevance and toxicity using LLMs. Furthermore, modern LLMs facilitate natural conversation, creating a more intuitive user experience that increases usability for OAs [37, 90]. Therefore, we suggest designers explore similar blocking tools that integrate AI, allowing LGBT+ OAs to personalize their filtering criteria - such as using natural language - and automatically detect unwanted content based on those criteria. Future work should also focus on refining the content moderation model by evaluating their accuracy and usability with LGBT+ OAs, utilizing both quantitative assessments and participatory design methods.

Furthermore, in light of LGBT+ OAs’ emphasis on personal interests in their social interactions (P2, P3, and P5), we also suggest an interest-driven dating process. Design solutions from other research explore forming friendship-focused connections by helping users locate and connect with other LGBT+ individuals nearby who share similar interests and goals [51]. This approach could also be beneficial for older users, catering to those who are seeking more than fleeting connections, as our findings suggest a declining interest in casual sexual relationships among LGBT+ OAs (P1 and P4).

Additionally, participants raised concerns about the lack of identity verification on LGBT+ dating apps (P4). Prior research highlights that users often mitigate risks from ‘catfishing’ or fraudulent profiles by cross-linking their accounts with other social media platforms, such as sharing personal Instagram photos to establish authenticity and identity verification [93]. However, this strategy may be less effective for OAs. As findings from P8 indicated, many LGBT+ OAs intentionally limit their engagement with LGBT+ content on mainstream social media platforms to avoid potential judgment or discrimination. Therefore, we suggest designers to incorporate alternative identity verification methods that cater specifically to the needs and preferences of LGBT+ OAs, such as peer endorsements within trusted community circles, akin to [48].

In summary, future design work should focus on promoting genuineness and trust in LGBT+ dating apps for OAs. It requires enhanced user control, targeted moderation, and privacy-respecting verification processes. While advanced features like content blocking, AI-driven moderation, and friendship-focused connections show potential, designs must be tailored to the needs of LGBT+ OAs.

5.3 Enabling Non-Digital Support to Engage Digitally Disconnected LGBT+ OAs

Literature on barriers to OAs’ digital literacy is extensive and covers a wide range of perspectives, such as age-related physical and cognitive challenges, fears around learning about technology [45] and the loss of workplace-based technical support after retirement [66]. Surprisingly, our study found that digital exclusion does not always equate to social isolation. As S1 indicated, in environments where there is strong community support, such as LGBT+ retirement housing, residents can remain socially engaged despite their

lack of digital literacy. As opposed to engaging with the LGBT+ community online or general senior centres, this environment allows OAs to maintain a fulfilling social life without concerns about potential judgements on their identity. Additionally, the support provided within the housing community (from staff or other digitally literate residents) helps to build LGBT+ community knowledge in these spaces, ensuring OAs remain informed and do not miss out on social opportunities which require technology to identify. These findings align with existing research, which highlights the importance of creating a supportive network to address social isolation and technology challenges, suggesting that social groups for OAs could provide an effective forum for digital support and guidance [66]. Therefore, it is important to ensure that LGBT+ OAs have access to these offline community support networks to mitigate social isolation and digital exclusion.

However, our study also found that not all LGBT+ OAs with insufficient digital literacy are involved in such networks, particularly those who conceal their identity. P1 described that this dual challenge not only isolates these digitally disconnected LGBT+ OAs socially but also complicates efforts by community organizers and support groups to reach and assist them.

To better support digitally disconnected OAs, Morrison et al. advocate providing continued, accessible digital training as part of retirement planning [66]. This training aims to bridge the gap in digital literacy between “working age (UK ages 18-65)” and “older age (UK ages 65+)” and support ongoing community engagement. Such training can be particularly crucial for LGBT+ OAs, who may have less close family ties and a diminished friend circle as they age into older adulthood [35] limiting the social support networks available to them [77]. Moreover, while the positive impacts of digital literacy training for OAs have been largely discussed, many prior studies recruited these digitally excluded OAs through senior centres [68, 78] which is not feasible for recruiting all LGBT+ counterparts who may not be openly ‘out’, or further removed from society without access to mainstream platforms. Therefore, there is a need to emphasize a combined approach that includes proactive offline outreach alongside digital literacy training for service providers that better engage mixed (e.g. LGBT+ and OA) marginalized groups in society to engage them more proactively.

Within other minority health communities, research has demonstrated the effectiveness of using non-threatening and anonymous messaging to reach this hidden group, for example, by using passive messaging to elicit behaviour changes in people with alcohol use disorders [57]. Similarly, offering discreet, low-pressure methods for hidden marginalized LGBT+ OAs to access resources or information could prove effective, as S1 suggested, by actively flyering with community-specific information that can be applied by OAs when going online. Furthermore, in light of the challenges of reaching hidden LGBT+ OAs who conceal their LGBT+ identity, we also propose the partnerships between LGBT+ organizations and OA centres to potentially engage this population who is involved in the general senior groups but not the LGBT+ ones. It is important to build trust with all OAs through community engagement and collaboration with ‘community champions’, such as community leaders and service providers [30]. These ‘champions’ digital expertise must however, go beyond just an offer of support for OAs, with active communication about how they can support e.g. LGBT+ OAs’

digital identity challenges in a confidential manner. Community centres must also use a mix of useful, transferable and specific information through digital message boards and location-based displays (in centres) as well as non-digital methods (like flyers) that LGBT+ OAs can reference as a tangible resource.

6 Limitations & Future Work

While this study provides valuable insights, it is not without limitations. First, with the first-come-first-serve basis of the participant sample, the sample size of 10 OA participants was not fully representative of the diversity of all LGBT+ OAs. Eight out of ten participants were male, with seven identifying as gay men, resulting in a bias in our data and a lack of perspectives from other gender identities, such as transgender individuals, and other sexual orientations besides the gay, lesbian and bisexual communities. This limited the generalizability of the findings across the broader LGBT+ OA community. Future research could consider using a different sampling method allowing for purposive sampling of participants covering all genders and sexual orientations to help ensure greater LGBT+ diversity and include their insights in the design of future tools.

Secondly, given the limited time constraints, the study included only one service provider from one organization who provided insights from a third-party perspective on the discovered digital disconnectedness theme from the interviews with LGBT+ OAs. While this perspective was valuable, it did not capture the full range of experiences and viewpoints from those who work with LGBT+ OAs, which could have enriched the analysis. Even though the current staff participant was the only worker who closely connects with LGBT+ OAs' daily lives in the only LGBT+ retirement housing in the UK, future research could broaden the scope by including other service providers working in different settings, such as healthcare, social services, and community organizations that interact with LGBT+ OAs.

Moreover, due to the inherent difficulties in accessing LGBT+ OAs with a lack of digital literacy, the study was unable to recruit LGBT+ OAs who are not digitally connected with the community. This was a significant limitation, as it excluded the voices of some of the most socially isolated and overlooked individuals. Future research should prioritize developing proactive strategies to engage digitally disconnected LGBT+ OAs. Research methods could also be adapted to be more accessible to those with limited digital literacy, such as using paper surveys and telephone interviews.

Further, digital collaborative tools are often used to support service providers in real-time communication and resource sharing, which could be useful to potentially reach and support those digitally disconnected LGBT+ OAs. However, this approach was largely under-explored in our study. Community mapping is an example of collaborative tools, which has been proven effective in helping service providers identify valuable community resources or gaps in services, develop strategies and foster better connections between service providers and those in need of specialized offline support that translates to online engagement [70]. Therefore, we propose researchers and practitioners explore developing digital collaborative tools for all relevant senior centres and service providers to share information on LGBT+-inclusive resources in local areas, such as

events, healthcare, and support networks, ultimately improving the accessibility and coordination of services for LGBT+ OAs.

7 Conclusion

This study explored the social connection needs of LGBT+ OAs and examined the unique challenges they face when using technology to enhance their social lives. The findings highlighted the critical role of LGBT+ community engagement in fostering a sense of belonging and affirmation for LGBT+ OAs while highlighting the importance of balancing these relationships with broader social connections. The study also identified significant barriers related to technology use, such as managing online identity, navigating casual hook-up cultures on LGBT+ apps, and the exclusion of digitally disconnected and reserved individuals from support networks.

The design implications drawn from these findings emphasise the need for social platforms that allows LGBT+ OAs to manage selective visibility, promote genuineness and trust in LGBT+ apps, and provide non-digital outreach strategies to engage hidden and isolated LGBT+ OAs.

For HCI researchers and practitioners, we have further provided an empirical investigation of LGBT+ OAs that focuses on their social wellbeing, which has been largely absent from the research literature. Future research should therefore consider incorporating more diverse LGBT+ community subgroups, engaging digitally excluded individuals, and further exploring intersections of age, gender and sexual identity. By continuing to develop socially inclusive technology solutions, we can better support the social connectivity and wellbeing needs of LGBT+ OAs.

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