

Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0 DEED)
<https://creativecommons.org/licenses/by-nc-sa/4.0/>

Access to this work was provided by the University of Maryland, Baltimore County (UMBC) ScholarWorks@UMBC digital repository on the Maryland Shared Open Access (MD-SOAR) platform.

Please provide feedback

Please support the ScholarWorks@UMBC repository by emailing scholarworks-group@umbc.edu and telling us what having access to this work means to you and why it's important to you. Thank you.



Complex Dynamics: Disability, Assistive Technology, and the LGBTQIA+ Community Center Experience in the United States

Kirk Andrew Crawford

kirk4@umbc.edu

Information Systems, University of
Maryland, Baltimore County
United States

Katta Spiel

katta.spiel@tuwien.ac.at

Human-Computer Interaction Group,
TU Wien
Austria

Foad Hamidi

foadhamidi@umbc.edu

Information Systems, University of
Maryland, Baltimore County
United States

ABSTRACT

In this study, we explore the experiences of LGBTQIA+ individuals with disabilities in community centers in the United States, with a focus on the role of assistive technology (AT). Our research addresses three key questions: (1) How do LGBTQIA+ individuals with disabilities navigate intersecting identities in community centers? (2) How do social connections impact AT use in these environments? (3) How do community center norms and structures influence AT use? Through 11 semi-structured interviews, we examine the challenges and barriers faced by people with disabilities, their motivations for visiting centers, the impact of social dynamics, structures, and norms on AT use, and the importance of social connections. To address these challenges and foster lasting change, we offer recommendations for designing more inclusive and affordable AT, nurturing interdependence, and promoting collaboration between LGBTQIA+ community centers and disability organizations.

CCS CONCEPTS

• **Social and professional topics** → **People with disabilities; Sexual orientation; Gender**; • **Human-centered computing** → **Empirical studies in accessibility; Accessibility technologies**.

KEYWORDS

Assistive Technology, Disability, Stigma, Marginalized Communities, LGBTQIA+, Intersectionality, Community Centers and Spaces, Qualitative Research, Thematic Analysis

ACM Reference Format:

Kirk Andrew Crawford, Katta Spiel, and Foad Hamidi. 2023. Complex Dynamics: Disability, Assistive Technology, and the LGBTQIA+ Community Center Experience in the United States. In *The 25th International ACM SIGACCESS Conference on Computers and Accessibility (ASSETS '23)*, October 22–25, 2023, New York, NY, USA. ACM, New York, NY, USA, 15 pages. <https://doi.org/10.1145/3597638.3608401>



This work is licensed under a Creative Commons
Attribution-NonCommercial-ShareAlike International 4.0 License.

ASSETS '23, October 22–25, 2023, New York, NY, USA

© 2023 Copyright held by the owner/author(s).

ACM ISBN 979-8-4007-0220-4/23/10.

<https://doi.org/10.1145/3597638.3608401>

1 INTRODUCTION AND BACKGROUND

The LGBTQIA+¹ community is a diverse group of people who share a common identity and experience based on their sexual orientation and gender identity [81]. In discussing the LGBTQIA+ community, we acknowledge that the community comprises individuals with a wide range of experiences, perspectives, opinions, and beliefs [62, 82]. Unfortunately, many in the community share a collective history of marginalization, discrimination, and social stigma because of their identity [16, 23, 40, 66]. This shared history and experience necessitated the creation of LGBTQIA+ community centers that cater to the community's specific needs and concerns [38]. In the United States (U.S.), these centers have had a rich history dating back to the late 1960s and early 1970s, a time of uprising in support of LGBTQIA+ rights [47]. Over time, they have evolved into safe spaces that promote inclusive policies and practices designed to provide housing, employment and education, and counseling opportunities [38, 58].

LGBTQIA+ community spaces provide a safe haven from discrimination stemming from anti-homo and anti-trans biases, often contributing to the marginalization and isolation of LGBTQIA+ individuals [38]. These biases relegate them to the fringes of society, restricting their access to vital resources, services, and support networks [40, 66]. Trans women of color, in particular, endure higher rates of violence, discrimination, and harassment than cisgender women [33]. According to the National Center for Transgender Equality (NCTE), transgender people of color are more prone to poverty, homelessness, and employment discrimination than their white counterparts, as well as increased exposure to physical violence and hate crimes [80]. While, in some Black communities, homosexuality may be perceived as incompatible with traditional cultural values [76]. Consequently, Black LGBTQIA+ individuals often face intersectional discrimination rooted in their race, gender identity, and sexual orientation [9] and are less inclined to publicly disclose their sexual orientation compared to other members of the LGBTQIA+ community [104].

Individuals identifying as LGBTQIA+ with disabilities also need and depend on the support of these centers. However, they face unique, complex challenges often overlooked in mainstream society, sometimes hindering their ability to fully participate in activities and benefit from these safe and supportive environments [14, 63, 64].

¹The acronym "LGBTQIA+" represents a diverse group of sexual orientations and gender identities. Individually, "L" stands for lesbian, "G" for gay, "B" for bisexual, "T" for transgender, "Q" for queer or questioning, "I" for intersex, and "A" for asexual, agender, or allies. The "+" symbol acknowledges the inclusion of other sexual and gender minorities not explicitly represented in the acronym. The definition of LGBTQIA+ is continually evolving to reflect the diversity of the community [89].

People with disabilities with multiple marginalized identities experience higher levels of discrimination and social exclusion, leading to increased poverty, unemployment, and underemployment compared to those without disabilities [70]. They also face greater rates of violence, abuse, and neglect [42]. These challenges can create a perpetual cycle of distress, significantly impacting their physical and mental health, safety, and well-being [30, 72, 93].

Moreover, individuals with disabilities can struggle to access and fully participate in community experiences due to various physical and metaphysical barriers. For instance, people with mobility disabilities might face physical obstacles such as steps or narrow doorways, restricting their movement or entry into a space [44, 55]. Additionally, individuals with sensory disabilities may find engaging in events with loud music or crowds difficult, as overwhelming noises or flashing lights can be distressing [103]. Similarly, spaces lacking sign language services are not inclusive for those who are deaf or hard of hearing [65]. Furthermore, disability stigma within the LGBTQIA+ community, such as assuming disabled people are asexual or uninterested in romantic relationships, can further exacerbate the physical challenges people with disabilities experience in these spaces [52, 87]. However, the shared experiences of marginalization can sometimes result in the development of strong connections between individuals, a concept referred to as access intimacy, which we will discuss in more detail later in this paper [69].

These experiences are often supported through the use of assistive technology (AT), which helps people with disabilities connect and interact with others. Examples of AT can include hearing aids, screen readers, or canes [86]. Importantly, AT can also include commonly used devices such as smartphones [4]. People with hearing disabilities, for example, can use text messaging or email as an alternative to phone conversations [ibid]. Similarly, people with mobility impairments can use voice-activated assistants like Alexa to control smart home devices or access information without physically using them [79]. However, AT can be prohibitively expensive, making it difficult for everyone to access and utilize these technologies [86]. Furthermore, AT devices are sometimes left unused or abandoned as some individuals choose not to use them altogether [43, 77]. Although the role and use of AT to support people with disabilities have been extensively researched and debated, to our knowledge, the extent to which AT is used or not used in LGBTQIA+ community centers to facilitate connections among people with disabilities is not yet well understood.

To examine the accessibility and inclusivity of LGBTQIA+ community centers, we conducted semi-structured interviews with individuals who identify as LGBTQIA+ and have disabilities. These interviews were conducted with individuals from varying backgrounds, demographics, and walks of life. We aimed to understand the role of AT in these spaces.

The following research questions guide our study:

- (1) How do LGBTQIA+ individuals with disabilities navigate their intersecting identities in LGBTQIA+ community centers?
- (2) How do social connections impact AT use in these spaces?
- (3) How do community center norms and structures affect AT use?

We approached our research through an intersectional lens to better understand the experiences of our study participants, recognizing the importance of considering the interconnected aspects of their identities, such as gender, sexuality, and disability. This perspective allowed us to uncover the pressure people with disabilities feel in the LGBTQIA+ community to downplay or conceal their disability to fit in with the larger community. Our findings show that while LGBTQIA+ community centers are generally perceived as safe spaces where individuals can freely express themselves without fear of discrimination from the outside world, this sense of safety is not the same for people with disabilities relying on AT and social connections for support.

Through this study, we provide several contributions to accessibility and AT communities. Firstly, we advance the understanding of how social dynamics and power structures are shaped by unwritten rules, long-established norms, and disability stigma within LGBTQIA+ community centers and how this influences the experiences of people with disabilities in those settings. Secondly, we shed light on the use and adoption of AT in these spaces and how social norms and structures impact the decision to use or not use AT. Our findings offer implications for LGBTQIA+ community center infrastructure, highlighting the need for greater accessibility and inclusivity measures and an awareness of the needs of people with disabilities in the LGBTQIA+ community. Lastly, our exploration into the role of AT in facilitating social connections and safety for people with disabilities in these spaces highlights opportunities for designing technology in more inclusive and equitable ways.

In the following sections, we review related literature and discuss the theories that guide our study. We then outline our research methods, including participant demographics, to provide background and context for understanding our participants' unique experiences and perspectives. Through direct participant quotes, we highlight key themes illuminating the challenges people face navigating their LGBTQIA+ and disability identities in community center settings. We also explore the implications of these findings for the design of AT and the structure of LGBTQIA+ spaces to support inclusion and accessibility. Finally, we tie our results to the broader literature and discuss our study's overall implications.

2 RELATED WORK

In this section, we examine key literature that informs our understanding of the experiences of LGBTQIA+ individuals with disabilities in community spaces and their use and non-use of AT. We examine the intersection of LGBTQIA+ and disability identities, delve into the notions of "place" and "space," discuss the social aspects of AT usage, and underscore the value of LGBTQIA+ community centers as safe spaces.

2.1 Overlapping Modes of Oppression: LGBTQIA+ and Disability Identities

In our study, we draw on the concept of self-determination as the foundational aspect of the LGBTQIA+ identity [19] and a relational model of disability [46]. Both the LGBTQIA+ and disability identities rely on interpersonal and situational cues as well as constantly re-negotiated boundaries to manifest or not manifest at any given moment. This perspective on disability contrasts with the

deficit-oriented medical model [60], which locates disability within a specific individual, and the singular social model of disability [74], which solely identifies a mismatch between external expectations and embodied specificity as the source of disabling experiences. Instead, we perceive disability as a multifaceted and ever-evolving aspect of one's identity that transitions between foreground and background concerns depending on contextual circumstances.

This perspective does not deny that people with minority bodies experience oppression and must navigate these challenges, particularly when encountering everyday environments built with assumptions that overlook potential differences [5]. The amplification of such experiences through technological means has been previously demonstrated for LGBTQIA+ (e.g., [50, 59, 98]) and disabled (e.g., [8, 51]) communities individually. However, at the intersection of these identities, unique modes of oppression arise, as emphasized in Garland-Thomson's personal narrative of becoming disabled and Samuels's exploration into the complexities of visible and invisible disabilities in the context of coming-out discourse [31, 85].

Therefore, intersectionality, the study of how different social and cultural identities intersect and interact [18], is crucial for understanding the distinct experiences of LGBTQIA+ individuals with disabilities and their relationships to their technologically mediated environments [90]. This is particularly relevant when accessing each other's community spaces. People with disabilities encounter access barriers to LGBTQIA+ spaces, while people who identify as LGBTQIA+ face challenges accessing disabled communities [25]. These access issues are further intensified for people of color in either context [75]. Consequently, navigating access into other marginalized communities involves renegotiating the role of access for people with disabilities outside these communities. Technologies typically considered to provide access may adopt new or alternative roles as they engage in additional, socially constructed necessities of negotiation.

2.2 Social and Community Aspects of AT

Previous scholarship has explored the social and communal aspects of AT use, emphasizing the necessity of incorporating perspectives of disabled people directly and addressing social barriers, such as stigma and misconceptions about disabilities, to promote widespread AT adoption [95, 96].

Wobbrock et al. introduced the concept of ability-based design, which focuses on leveraging an individual's abilities rather than emphasizing their disabilities [105]. This approach encourages the creation of flexible and adaptable systems tailored to users with diverse abilities [ibid]. Shinohara et al. further refined the strategy towards design for social acceptability by underscoring three tenets: (1) including people with and without disabilities, (2) addressing both functional and social factors simultaneously, and (3) incorporating tools to support the consideration of social factors in accessible design [95]. In another study, Shinohara and Wobbrock asked participants to record their AT experiences in various social contexts, including socializing with friends, participating in group activities, and attending events [96]. The study revealed that using AT can have positive and negative social implications, suggesting that the social accessibility of AT can be influenced by factors such as the perceived visibility of the device, the context of its use, and

the user's self-perception [ibid]. This work emphasized the situational complexity of designing inclusive and culturally sensitive technology [ibid].

Similarly, social dynamics impact the use of AT when people with disabilities and their colleagues, peers, families, or other community members interact. For example, Branham and Kane investigated the experiences of people with disabilities in mixed-ability workplaces and the collaborative environments created by blind and sighted companions at home [10, 11]. This research stressed the significance of understanding diverse user needs and promoting collaboration for inclusive design [ibid]. More recently, Bennett et al. underscored the importance of considering interdependence as a frame for AT research and design, highlighting the role of social networks and support systems in facilitating better social integration for individuals with disabilities [6]. Their work demonstrated the need to consider the complex relationships between individuals with disabilities and their support networks when developing AT [ibid].

With respect to how community perspectives can interact with AT design and use, Ringland and Wolf highlighted the significance of community-driven efforts in AT development and the transformative potential of technology when co-created with the people they aim to assist [83, 84]. Faucett et al. brought visibility to the complexities and challenges involved in navigating the visibility of AT devices, emphasizing the need for AT design that promotes acceptance, integration, and a sense of belonging in social contexts [27]. Profita et al.'s work highlights the importance of customization in empowering users and fostering positive self-image, which we argue is an important consideration when designing AT for individuals of intersecting marginalized identities [78].

Finally, there is a growing body of research that studies accessibility and AT from an intersectional perspective. In a study with screen reader users who were also Black, Indigenous, People of Color, Non-binary, and/or Transgender, Bennett et al. found that participants negotiated tensions between wanting to know others' appearance and knowing the vulnerabilities of expecting such information when provided using text image descriptions [7].

These studies collectively stress the importance of understanding the diverse needs, preferences, and experiences of people with disabilities to create more inclusive and accessible environments. However, they leave a notable gap in addressing the unique experiences of LGBTQIA+ individuals with disabilities in community centers and spaces.

2.3 LGBTQIA+ "Spaces" and "Places"

We discuss the role and significance of LGBTQIA+ community centers and spaces through the concepts of "place" and "space." According to Kenney, understanding the role of these spaces necessitates considering the experiences of individuals who visit them [49]. Dourish distinguished between "place" and "space," defining "place" as a specific location characterized by a unique identity, while "space" refers to the social, cultural, and emotional context experienced by individuals within a given environment. [21]. In this work, Dourish also discussed the differences between physical and virtual spaces, highlighting their interconnected nature and similar experiences for individuals in these environments [ibid].

Physical spaces refer to tangible locations where individuals can physically gather. On the other hand, online or virtual spaces encompass digital platforms and environments where individuals interact through various forms of technology, such as social media platforms, online forums, or virtual reality environments. We use Dourish's conceptualization of place and space to situate our study.

While the majority of research centered on LGBTQIA+ experiences with interactive technologies has focused on virtual experiences (e.g., [1, 24, 34, 35, 58, 88, 100, 106]), their findings reveal the potential role of technology in fostering connections and social support networks within both online and offline communities through an acknowledgment of the interconnected nature of these experiences. Despite this recognition of the importance and role of online LGBTQIA+ community spaces, to our knowledge, previous research has not adequately addressed the experiences of LGBTQIA+ individuals with disabilities in physical spaces and places, particularly in relation to their use or non-use of AT in these contexts.

In our study, we contend that understanding the accessibility needs of this community requires addressing not only the physical attributes, such as accessibility features and layout, but also social dimensions, encompassing interpersonal relationships and shared experiences within a given space [21, 22]. Despite the lack of a universally accepted definition to define the physicality of LGBTQIA+ community spaces to contextualize the findings and discussion offered in our study, we borrow from Dourish and Bell's conceptualization of physical space and Kenney's description of the intersections between gay culture, politics, and geography to define them as *safe spaces* specifically created to support the *social and physical* needs of those in LGBTQIA+ communities [22, 49].

We, however, acknowledge the limitations of our definition. For instance, the perception of what constitutes a safe space can differ significantly among individuals in the LGBTQIA+ community [88]. Moreover, since our study is deeply rooted in the historical and cultural perspectives of the U.S., we acknowledge that other countries and cultures will have different experiences, perspectives, and histories, and our definition may not be directly transferable to these contexts. [71, 106]. We are also mindful of recent LGBTQIA+-focused studies conducted outside of the U.S., such as Carron and O'Keeffe's study on the experiences of LGBTIQ refugees in Kakuma Refugee Camp [15] and Shevtsova's work on LGBTIQ migration and activism in Central-Eastern European countries in the context of the Russia-Ukraine conflict [94]. These studies highlight the necessity of considering the diverse cultural and societal attitudes towards the LGBTQIA+ community, as well as the varied availability and accessibility of community spaces beyond the U.S. We hope that this paper encourages further exploration and discourse on the experiences of LGBTQIA+ individuals with disabilities not only in different contexts in the U.S. but also globally to shed light on the impact of broader social and cultural factors.

3 RESEARCH METHODS

This section details our research methods, including our recruitment strategy and study participants, data collection approach, and analysis method. We further offer insights into our positionality.

3.1 Study Participants

To effectively reach potential participants, we collaborated with local LGBTQIA+ community centers in the U.S. The collaboration

required acknowledging and navigating the challenges of recruiting within this community due to mistrust of research, concerns about confidentiality, and potential negative consequences of identity disclosure [56]. Recruitment occurred between October and December 2022. We utilized social media platforms such as LinkedIn, Reddit, and Craig's List to share recruitment flyers and reach hidden and hard-to-reach individuals [99].

We selected these online platforms as they offered a safe and convenient space for potential participants to learn about research opportunities and express their interest without fear of disclosing their identities or facing additional stigmatization [67]. By tapping into existing networks and online communities, we were able to reach a more diverse population and gain access to various sub-groups within the community [61]. Moreover, leveraging social media platforms for recruitment allowed us to recruit from a broader geographical area [53]. We also encouraged participants to share information about the study with others who might be interested in contributing to the research, further expanding our reach [28].

To ensure diversity among study participants, we recruited eleven individuals with differing disabilities, racial backgrounds, self-disclosed gender identities, and sexual orientations. Table 1 provides an overview of these demographics. Each participant received a 30 USD gift card as a token of gratitude for their contributions.

3.2 Data Collection

All eleven semi-structured interviews occurred between November 2022 and January 2023 through virtual sessions performed by the first author. Each interview lasted approximately 60 to 90 minutes and was audio recorded and transcribed. Consent was obtained from all participants before conducting the recorded interviews, and our interview questions followed a comprehensive protocol. The protocol included guidelines for informed consent, confidentiality, data storage and management, and participant privacy protections. The study and all materials were approved by a university Institutional Review Board (IRB). To ensure the comfort and safety of the participants, we explicitly stated at the start of each interview that participants had the right to refuse to answer any questions or end the interview at any point. Similarly, they would be able to withdraw their previously given consent at any point until publication of the result. We further allowed participants to partake in the session with their cameras off to protect their identities.

Prior to the interview, participants completed a brief demographics questionnaire and signed a consent form. The questionnaire collected information on their age, gender identity, sexual orientation, race/ethnicity, type of disability, education, employment, income, and prior experience visiting LGBTQIA+ community centers. This information allowed us to better examine the diverse experiences within the participant pool and investigate how various demographic factors may intersect with their experiences in LGBTQIA+ community centers.

3.3 Data Analysis

The first author led the initial coding and analysis process using Braun and Clarke's constructivist thematic analysis approach [12]. This approach was chosen based on the first author's prior experience conducting all interviews and the recommendations for rigorous self-reflection throughout the coding process by Braun and Clarke and Esposito and Evans-Winters [13, 26]. This analysis

Table 1: Participant Demographics

P#	Age	Disability	Race and Ethnicity	Gender Identity	Sexual Orientation
P1	25	Vision; Mobility	African-American / Black	Cis man	Gay
P2	22	Vision ; Cognitive	Asian-American; East Asian	Cis woman	Asexual; Lesbian
P3	34	Hearing	African-American / Black	Cis man	Gay
P4	23	Hearing ; Self-care difficulty	African-American / Black	Trans woman	Lesbian
P5	25	Hearing ; Mobility	African-American / Black	Cis man	Gay
P6	25	Hearing ; Mobility	African-American / Black	Cis man	Gay
P7	25	Vision ; Mobility	White	Trans man	Gay
P8	24	Vision	African-American / Black	Trans woman	Queer
P9	26	Hearing ; Vision	African-American / Black	Trans man	Gay
P10	28	Hearing ; Mobility	African-American / Black	Cis man	Gay
P11	27	Hearing ; Mobility	African-American / Black	Cis man	Gay

process consists of six steps: (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the final report [ibid].

During the first step, the first author reviewed the transcripts multiple times, rectified any discrepancies with the interview recordings, and documented initial impressions. Throughout the study, the first author also engaged in regular reflexivity exercises, employing memoing and self-reflection strategies to address potential limitations and biases in the analysis process as recommended by Esposito and Evans-Winters and Braun and Clarke[13, 26]. This activity was necessary to capture the first author’s thoughts, insights, and interpretations throughout the analysis. These strategies were crucial in conducting this study with a marginalized population as they helped to create self-awareness of individual pre-conceptions, assumptions, and potential influences on the analysis [ibid].

In the second step, initial codes were generated by identifying and labeling meaningful data segments related to the research questions. This process involved breaking the data into smaller groups while preserving their original context. In the third step, the first author searched for themes by examining the initial codes and organizing them into broader categories based on similarities and relationships. This approach facilitated the identification of potential overarching themes encompassing multiple codes. Emerging patterns or connections between these themes were also considered. A sample of our final codes and their connection to the themes and sub-themes discussed later in this paper are provided in Table 2.

During the fourth step, the first author reviewed the themes to ensure they coherently and accurately represented the data. This process involved refining and, if necessary, merging or splitting themes to better capture the essence of the data. The first author also revisited the transcripts to verify that the themes were grounded in the original data and adequately addressed the research questions. Finally, in the fifth step, the themes were defined and named to ensure they clearly and concisely described each theme’s scope and meaning. This task involved refining the titles of themes to frame our narrative representing the participants’ experiences and perspectives.

Given our analysis approach, it is important to recognize that the interpretative nature of our process implies that our findings are transferable to similar contexts but not necessarily generalizable

[13]. Therefore, others might draw different conclusions on various aspects of the data set [ibid]. To ensure the robustness of our analysis, we conducted collaborative discussions of themes among the research team [ibid]. The second and third authors provided feedback on the coding and analysis process, reviewing the high-level themes and outcomes of the first author’s analysis. They challenged the first author’s assumptions and interpretations to ensure they were grounded in the data, bringing their individual perspectives to the process and ensuring a more balanced interpretation of the data. These discussions provided a deeper understanding of the data set and helped the first author identify and address any potential biases in the coding process. Additionally, this team-based approach allowed us to leverage our diverse perspectives, mitigate individual biases, and ensure a more rigorous and balanced interpretation of the data. We also explicitly present our positionality for transparency and to acknowledge our viewpoints.

3.4 Positionality

We are a research team with diverse backgrounds and life experiences. None of us share all intersecting identities of our participants. However, we have overlapped with different aspects of their identities and experiences, which we know has likely influenced our analysis. Our team benefits from including an author based in Europe, which expands our perspective beyond a strictly U.S.-centric viewpoint. In accordance with previous research, we recognize that our individual experiences, identities, and positionalities can shape our research process and outcomes [91]. Therefore, we acknowledge our privilege and position of power as academics working with people with disabilities, people identifying as LGBTQIA+, and people of color, even if amongst us, individuals hold one or several (but not all) of these marginalized identities themselves. We aimed to remind ourselves of this power imbalance and approach the study with humility, reflexivity, and a willingness to learn from our participants. Ultimately, our goal has been and remains to be that our research is methodologically rigorous and responsive to and respectful of the unique perspectives and experiences of the communities with which we engage.

4 FINDINGS

In this section, we highlight the experiences of people with disabilities, calling attention to the unique challenges they experience

Table 2: Qualitative Thematic Codes

Theme	Sub-theme	Codes
Motivations for visiting LGBTQIA+ community centers	Viewing centers as sanctuaries of open self-expression	Defining safe space, Feeling safe in center, Joining when comfortable, Pressure-free space, Safe space as sharing platform
	Safe communities become surrogate families	Importance of friendship at center, Ease of integration with friends, Genuine connections and safety, Support from friends/family
The limits and avoidance of AT	Social stigma discourages AT use	Avoiding sexuality discussions, Reluctance to use hearing aids, Non-disclosure at LGBTQ+ centers, Stigma against seeking accommodations, Concealing invisible disabilities
	The limitations of AT in supporting community engagement	AT needing supplemental support, Overcoming loud music, Disability exposure for accommodations, Friend-assisted participation, Occasional dependence on accommodations
The importance of social connections	Social connections help overcome barriers to AT access	Friend influence on center choice, Time-consuming accommodations process, Initial mistrust at center
	Social connections encourage AT use	Being self for help, Comfort with friends, Preference for companionship
The necessity of adapting to social structures and norms	Fitting into established social circles and structures as a newcomer	Center for community integration, Varying comfort levels across communities, Proximity-based center choice, Necessity of understanding community norms
	Existing social connections benefits access to support	Staff support and culture, Support during anxiety episodes, Verifying information from friends

while navigating the intersection of their disability, gender, and sexuality identities within LGBTQIA+ community centers. Using participants' quotes to contextualize their perspectives, we present a multifaceted understanding of their motivations, strategies, and attitudes toward AT and accessibility in these spaces.

4.1 The Motivations for Visiting LGBTQIA+ Community Centers

For people with disabilities who face discrimination based on their intersecting marginalized identities, seeking refuge from violence and finding a sense of community and belonging are key motivations for seeking out LGBTQIA+ community centers.

4.1.1 Viewing Centers as Sanctuaries of Open Self-Expression. For some, LGBTQIA+ community centers serve as safe spaces for open self-expression. P8 spoke about the significance of having access to a community center as a place to express themselves:

"I wasn't expecting anything, um, you know, spectacular. I just felt I was gonna be in a safe space where I can meet pretty much people with my same sexual orientation or people from my kind of background, or my race and ethnicity... I wouldn't have to feel, you know, judged or I wouldn't be perceived a certain way." (P8)

In this quote, P8 emphasized their desire to connect with others with shared lived experiences, seeking a place free of judgment. As a trans woman, P8's account highlights the importance of LGBTQIA+ community centers in providing a supportive environment for individuals like them. Their experience was similar to P4, who also identified as a trans woman of color with a disability:

"My first difficulty was having to tell my family, because you come from a Black family and.... my dad is still trying to stay in touch with his roots, some of our families in Africa and stuff like that. So, it was difficult. I was so scared. There were times when I was hit or people said really bad things...called me names and all. I didn't know what to say or do cause my family is

important and who knows what dad would say. I was looking for a place to go where I can just be free." (P4)

In this quote, P4 shared the difficulties they faced when coming out to their family, particularly because they grew up in an African-American family. The fear of their family's reaction also led them to seek a place to be themselves without fear of judgment or rejection. P4 also shared their experiences with both physical and verbal abuse because of their identity, expressing their hope that by finding an LGBTQIA+ community center, they could connect with others who understood their experiences.

Comments from both participants highlight the role of LGBTQIA+ community centers in providing a haven and support system for people facing discrimination and violence because of how they identify, both as trans women of color and as individuals with disabilities. For P4, this support system was especially important when seeking refuge from an unsupportive familial environment with a history of abuse. The experiences of both participants highlight the necessity for LGBTQIA+ community centers to be accessible to people with disabilities, ensuring that they can also benefit from these supportive environments.

4.1.2 Safe Communities Become Surrogate Families. During our study, we learned that for some people with disabilities, the communities cultivated within LGBTQIA+ community centers served as surrogate families, offering a sense of belonging and acceptance not present in other spaces. For example, P10 recounted why they sought out a community center:

"I didn't have a place to stay. I actually need the accommodation because I need it for someone to look after me and also I needed a place to stay." (P10)

In this quote, P10 shared that they turned to their local community center for support and housing accommodations, finding safety in its supportive environment and gaining access to resources they needed to feel safe. This quote sheds light on the intersection of multiple marginalized identities and their impact on one's sense of belonging and security, especially for Black gay cis-gender and

transgender men who often face compounding and heightened discrimination [9, 76, 104].

As revealed by P10, having a disability can amplify these challenges:

"I need a place to live where I can [physically] reach everything...I can cook, I can do things for me. I can get help from people here when I need it. So, it was very easy for me [to acclimate to the accommodations provided by the LGBTQIA+ center]. I mean, I was very happy about it because it was, um, I didn't have to do too much to get these accommodations. They're my family." (P10)

In this quote, P10 revealed how community center leadership helped them find accommodations that met their physical needs. This support, which we contextualize through the concept of access intimacy, comforted them and enabled them to acclimate to their new environment [69]. P10's reference to the community as "family" illustrates community centers' important role in developing strong social bonds and the necessity of access to this community for individuals with disabilities.

We found that for people who have it, familial support can significantly contribute to their comfort and ability to participate in LGBTQIA+ community spaces. This support can offer an additional sense of safety and acceptance and allow the freedom to explore one's identity more openly. This was exemplified in P2's comment, which emphasized that without the assurance of support from their parents, they may not have had the courage to venture into potentially unfamiliar and uncomfortable community spaces:

"I don't think I would have pushed myself to go into [community spaces] if I didn't already know that there was gonna be that support for my parents, which I'm not sure would have happened if I was raised in China or, with Chinese parents. Because I know the cultural values in China and their perspectives on things are very different than what both my Caucasian parents were raised with." (P2)

The intersection of culture, family, and faith can create additional conflicts and dilemmas for some people within the LGBTQIA+ community, exacerbating anxieties around judgment [57, 68]. P7 provided an example of this complex intersection:

"My major challenges, I think...it's the family faith...because as you can recall ... I'm a believer...I told you I'm a Christian. And it's a religion that I got inherited from the family... this is what I practice, this is the faith. I was brought up in the ways of the lord...although it felt like this was not what I actually want...this is what I want...this is what makes me happy and religion is a part of my happiness. This is where the challenges comes in, you know. At first, it was very challenging ... for my parents, and my siblings to accept me for who I am. So challenging, but I have no choice but for them to accept me." (P7)

In this quote, P7 expressed their struggle with reconciling their LGBTQIA+ and disability identities and happiness with their own and their family's religious beliefs and expectations, overcoming

fears of familial rejection. With a complex and conflicted relationship with their religion and identity, P7's account suggests the importance of family acceptance and support in helping LGBTQIA+ people navigate their intersecting identities and the challenges that arise. Moreover, their comment highlights LGBTQIA+ community centers' important role as surrogate families for those who lack the support and acceptance they need from others in their lives.

4.2 The Limits and Avoidance of AT

We discovered that LGBTQIA+ community centers serve as vital spaces for the community to come together and access social support. However, the non-use of AT by some people with disabilities within these spaces highlights the ongoing struggle for inclusivity, a sense of belonging, and safety for self-expression through the open use of AT.

4.2.1 Social Stigma Discourages AT Use. In several cases, participants refused to use their AT in LGBTQIA+ centers for fear of being judged by others. Having a vision disability, P8 relied on AT to read signs and materials, see faces, and interact with others. Despite these important uses, when asked whether they used their AT at the community center, they shared:

"No, no, not always. I don't want to stand out...[using AT] makes me stand out too much. People already stare enough. It's not always easy to go there without it and, sometimes I...can't do things, but it's OK most of the time." (P8)

This quote shows that despite missing out on some activities, P8 deliberately chose not to use their AT in the community center to avoid drawing attention to themselves. Furthermore, they felt self-conscious and uncomfortable using the device in this context. P8's decision to avoid using their AT at the center highlights the need for community organizers and designers to consider the needs of individuals with intersecting marginalized identities when creating inclusive environments and devices. Designing for inclusivity requires an awareness of both the accessibility of the physical space and the social aspects of AT, necessitating cultural sensitivity and awareness of the specific challenges faced by marginalized people [96, 97].

The social aspects of AT are important to acknowledge, as the decision not to use these devices can impede an individual's ability to fully participate in the community's activities and result in communication barriers and breakdowns that erode existing social connections. This, consequently, can lead to misunderstandings and fractured relationships. This experience was emphasized by P6:

"I do face some kind of rejection because of the disability. Sometimes, when people try to communicate with me, I always told him that, can you come again [i.e., repeat what they said]? They feel kind of insulted or disrespected...'why would I be saying they should come again?' I can't hear properly and for me, it's hard to explain myself... most of them would just get angry and just walk out away from me." (P6)

P6 described their complex choices in using AT in the community center. Usually relying on their AT to communicate, they chose to

forgo using the device due to fear of stigma. However, not using the device caused further tension due to the need to ask others to repeat themselves. They described the negative reactions from others who expressed anger when they struggled to communicate effectively without their AT. This quote reveals that P6's difficulty communicating with others in the center stems not from the disability itself but rather from the social barriers created by the stigma surrounding the use of AT. When asked whether they would consider using their device for future visits to the center, they shared:

"Because of my previous experience [with negative reactions to not hearing people], I just have to [use them at] the center." (P6)

P6's response suggests that despite the stigmatization of AT, they felt compelled to wear their device to prevent miscommunication and conflicts and maintain their sense of safety. This view wearing AT as a necessary trade-off for them to continue participating in the center's activities and maintain social connections.

Several participants described how helpful it was to see examples of how others with disabilities navigate the social aspects of a community center. For example, P1 shared how they viewed the complex interplay between their disability identity and social acceptance:

"For you to also have a disability [in addition to being marginalized due to sexual identity] that could, that could actually, make it worse...I took solace in that ... I didn't have the the worst case. So, I mean, if someone else with [a more challenging disability] was able to integrate into the whole setting, then there was always the possibility for me to do the same." (P1)

P1's comments suggest that they recognize the pervasiveness of stigma around disability within their community, noting that having a disability in addition to identifying as a gay person of color can compound the social challenges they experience as an individual belonging to multiple marginalized communities. Furthermore, seeing others with disabilities integrate into the community space made P1 feel more empowered to do the same, highlighting that a supportive and inclusive community that seeks to eliminate the stigma around disability and the use of AT can make it easier for people to participate in a community center setting.

Finally, family acceptance and support were also important for providing people with disabilities with the comfort and confidence they need to use AT in a community setting. This sentiment was shared by P4:

"My dad got me a hearing aid some time ago ... I think last year.... He convinced me to wear it and said it wouldn't be that bad. That made me do it but eventually I kind of took it off...I don't wear it always, just when I need to." (P4)

In this quote, P4 recounted a moment when their father convinced them to use their hearing aid. Although they acknowledged that using the device could be helpful, they decided only to wear it when they felt it was necessary. Their comment demonstrates the complicated decision-making process that people with disabilities may go through when considering using AT and the potential for

support and encouragement from family members to empower their loved ones to use AT despite the stigma surrounding them.

4.2.2 The Limitations of AT in Supporting Community Engagement. Despite many advancements in the capabilities and availability of AT, these devices should not be considered a panacea for the social challenges faced by people with disabilities in community settings. We found that for some participants with disabilities, AT prevented them from experiencing the sense of community that is a fundamental value offered by LGBTQIA+ community spaces.

P6 expressed their desire to participate in community activities without the limitations of using AT:

"The [hearing aid] I'm actually using [is] not a waterproof kind of hearing aid. So, I guess I'll be looking forward to getting a waterproof hearing aid so that it won't hinder my activity...my swimming activity in the community." (P6)

Having learned about a local swimming club from others at their community center, P6 expressed their desire to join the club but acknowledged that the functionality of their hearing aid was limited. They avoided swimming until they had access to a waterproof hearing aid. This comment highlights the need for AT to accommodate a wide range of activities and interests, allowing individuals with disabilities to fully engage in social activities.

We noted a subsequent limitation of AT, shared by P3:

"I can't actually stay where there's loud voice. Like, playing loud music because of how my hearing aid instruments...it's actually very loud once it comes to something very loud close to it, so anything related to music that would bring loud sound...I don't actually participate in that." (P3)

In this quote, P3 shared that although they were interested in participating, their hearing aid prevented them from partaking in music-related activities. They further elaborated on their feeling of exclusion when other community members made assumptions about their abilities because of their use of AT and their decision not to participate in activities:

"[With my hearing aid] I can actually hear what other people are saying loud and clear...but some people think I can't hear because I don't go to [all activities] so they don't speak to me or just look at me funny...don't know why." (P3)

P3's frustration at being excluded from conversations or activities despite being able to hear with their aids highlights the pervasive stigma around disability and the misunderstandings surrounding AT and its usage in the community.

These findings reveal that while using AT can be advantageous, it is not a perfect solution and may hinder an individual's ability to participate in activities they enjoy. This is particularly significant for those who face marginalization within the LGBTQIA+ community, as feeling unable to be part of a group can only further amplify feelings of loneliness and disconnection. These findings signal an opportunity to design ATs better suited for use in social settings and for community centers to better educate their members about the diversity and importance of using these devices to reduce stigma towards their use. They also emphasize the importance of ensuring

that AT is not a hindrance but a tool enabling individuals to live their lives to the fullest.

4.3 The Importance of Social Connections

Participants stressed the importance of personal relationships and friends as crucial support systems that supplement the limitations of AT, granting some individuals with disabilities the ability to participate in the community despite many physical and social barriers.

4.3.1 Social Connections Help Overcome Barriers to AT Access. Our study found that LGBTQIA+ community centers foster strong social networks that serve as vital support systems for those lacking access to AT, bridging the gap created by the unavailability or inaccessibility of necessary technology.

For example, P5 shared their experience participating in community center activities without using AT:

"I don't have anything to help, can't afford it. I ask but no one knows cheaper options. Like I said earlier, I normally do go [with] my colleague so, anytime my colleague is around me, he actually helped with that. He actually says it loud at my ears....so that I'll be able to understand and participate in the activities fully." (P5)

In this quote, P5's lack of insurance coverage and inability to afford AT highlights the importance of having a friend to help them participate in center activities. The necessity of having a friend to take part in events underscores the reliance on personal relationships in filling gaps when access to AT is not attainable.

In another case, P4 expressed their gratitude for being able to afford AT:

"I have my [device] on me always so it's never an issue. I have a friend who doesn't have it because it's pricey so I feel fortunate. I help her when I can." (P4)

Recognizing the financial barrier to accessing AT and acknowledging their privilege in being able to afford their device underscores the importance of recognizing and addressing socioeconomic inequalities in access to AT, particularly for marginalized communities. Furthermore, their willingness to help a friend reflects the relevance and necessity of access empathy in fostering supportive relationships and building a sense of community among individuals who face similar barriers to accessing AT [69].

As these accounts show, the significance of community building in LGBTQIA+ community centers cannot be overstated. In these contexts, community building is crucial in addressing the challenges faced by people with disabilities in accessing alternatives to often unaffordable AT in the U.S., often due to the high costs of living with a disability [2].

4.3.2 Social Connections Encourage AT Use. We further discover the importance of supportive social networks through P9's experience:

"Being there with my friend was better for me than using [an assistive device] because it was easier to integrate myself into this community because I didn't have to, you know, just look weird....I had a friend of mine who helped me complete my sentences, helped me hear and

talk properly, who also was there in terms of, you know, helping in case I needed to talk about something or in case I just [had a question]. So, I mean, he just made everything simple for me. (P9)

P9 chose to rely on their friend for support rather than use AT, making it easier for them to integrate into the community. They indicated that their friend helped them to communicate in a way that would allow them to participate fully while still avoiding the stigma of using AT within the community center. This friendship provided a sense of comfort and ease in challenging social situations.

The stigma surrounding disability and the fear of being judged were reinforced by P2, who was asked about their willingness to disclose their disability to others:

"There is still a stigma against having a disability and being LGBTQ and revealing yourself or presenting yourself as such.... There's gonna be judgment from certain people. And so I think naturally, we don't want to be judged as people, and we want to fly under the radar if we can....and I can for all things involved." (P2)

In the above quote, P2 expressed their desire not to be judged because of their disability. They also noted their desire to avoid being perceived as different or less than others, with a need to "fly under the radar" and not disclose their disability. This reflects that even in spaces intentionally created to provide safety, societal attitudes and discrimination can create a culture of shame and fear for people who identify as being part of multiple marginalized communities.

According to our participants, support from friends can help LGBTQIA+ people with disabilities navigate a culture of shame and fear, enabling them to feel comfortable being themselves and using AT in a community setting. For example, P7 described their experiences participating in group activities at their local center:

"The fact that I couldn't see clearly, and....I felt that I do not fit in although sometimes they try to make me go into some activities that I could actually do even while blind, but I just don't feel comfortable with that....if I knew someone that was close to me I could do it. That and my cane would be good. I would feel comfortable with more help from someone, like a friend or someone close, that's just it." (P7)

In the above quote, P7 describes how using their cane and being supported by a friend would make them willing to participate in activities that they would otherwise feel uncomfortable.

The presence of a supportive friend could not only offer both physical assistance and emotional support but also be necessary to get out of a difficult social situation, as illustrated by the following quote by P2:

"There were definitely times where I would be sitting in the community [center] and have a full-blown panic attack and my friends would either have to help me leave or sometimes I would just sit there until the end." (P2)

In this quote, P2 shared their experience of having panic attacks while at the community center. Having the support of their friends in either helping them leave the center or staying until the end

of an event demonstrates the importance of having a supportive network to navigate these difficult moments and underscores the value of friendships in providing emotional and practical assistance during times of distress.

These findings show that when AT or other accommodations fall short, having a supportive network can provide a valuable emotional and practical source of support to deal with the stigma surrounding disability and AT use. Community centers can help foster the development of these supportive networks by providing opportunities for people to freely connect with others who share similar experiences and interests.

4.4 The Necessity of Adapting to Social Structures and Norms

To gain a deeper understanding of the experiences of people with disabilities in LGBTQIA+ community centers, it is important to highlight how established social norms, rules, and structures impact their participation in these spaces.

4.4.1 Fitting Into Established Social Circles and Structures as a Newcomer. As a newcomer to their local center, P11 shared their struggles in gaining access to support from staff and navigating the established social circles and structures at the center:

"The thing is, the service provider can't actually work for me and so, they can't just leave their job and concentrate on just only you because, um, other people are coming in and they have to welcome them and show them the basic things and the rules of the community. So, it is actually good when you have somebody to go with..." (P11)

P11's experience highlights their realization that service providers cannot solely focus on their needs, given the influx of new visitors needing assistance. However, P11 also acknowledged the limitations of the center's staff, suggesting that it would be beneficial to go to the center with someone who can provide the necessary support. Expressing a desire to overcome this obstacle, P11 followed up:

"I'm still trying to get used to the way things are being done and people in the community, um... it's only when you are used to, people and how things are being done, you'll be able to maneuver your way...and be able to ask for whatever you want to ask the community. So, I'm still looking forward to that time to come." (P11)

P11's comment emphasizes the importance of having a support system when navigating established social circles as a new visitor. Their comment acknowledges that becoming accustomed to the social norms and structures of the center is key to overcoming the challenge of limited support from staff.

This challenge was echoed by P6's account of their experience seeking support while at their center:

"I'm very new at this community and people are not always available. So you just have to know who to ask and when to ask...that's what I do. Not everyone knows you and can help. I guess with time...I'll be able to ask for support." (P6)

Much like P11's experience, P6 recognized that community center staff may not always be available, making it difficult to know who to turn to for help. However, they confirmed the importance of knowing who to ask for help and when to ask, suggesting that building relationships and establishing a support network can take time and effort.

Despite these initial challenges, both participants expressed optimism that, over time, integration into the community would mean receiving the support they needed. Their accounts uncover the necessity for those new to LGBTQIA+ community centers to develop a strong support system to effectively navigate the challenges of seeking support and accommodation.

4.4.2 Existing Social Connections Benefits Access to Support. Participants with existing social connections within their community centers navigated these social circles to access resources and services more efficiently. For example, P10 expressed a sense of relief that they had an existing connection with the staff at the community center, specifically stating:

"When I go there, I mean, I immediately...made my introduction, I immediately got help because my friend knew the head [of the center], I was lucky with that." (P10).

P10's existing connection to the staff through a mutual friend allowed them to receive help as soon as they introduced themselves. Noting that they were "lucky with that" suggests that getting access to staff and support may have taken longer if an existing connection and social network did not exist.

The challenge of fitting into the existing social structure at their local community center because of a disability was shared by P1:

"I sense, you know, [that to fit into the community at the center I have to] just assimilate everything....try as much as possible to see how best I can provide solutions myself without the help of anyone. [This need for assimilation] was very new to me, because it means that I had to change. It means that I had to adopt new strategies, adopt new methods...and to solve problems and also how to get help. Yeah. So it was a little bit difficult for me because I was the only one with this [disability]." (P1)

P1 expressed a need to assimilate into their local center's existing social order and structure. This meant adopting new strategies to solve problems and get help independently without relying on others. They further acknowledged that it was a challenging experience doing so as they felt like outsiders because of their disability.

These accounts highlight the benefits of visiting these centers with a friend, the need to familiarize oneself with the center's operations, and the need to understand the rules and established social order to obtain the necessary support. As demonstrated, successfully meeting all three needs can be challenging for people with disabilities who already feel marginalized within the LGBTQIA+ community.

5 DISCUSSION

Our findings demonstrate that by cultivating an inclusive and welcoming environment, community centers can serve as a space for

LGBTQIA+ people with disabilities to build relationships and develop a sense of community, which can be particularly important for those who face social isolation or marginalization in other areas of their lives. Our findings further indicate that community centers have the capacity to provide a supportive network and foster trust-building opportunities, allowing people with disabilities to feel included and safe. However, there are still challenges faced by individuals with disabilities within these spaces.

The stigma associated with disability can result in the feeling of exclusion and reluctance to freely use AT or request accommodations for fear of drawing attention to one's disability, resulting in a desire to remain unnoticed [55]. Our participants shared several strategies used to navigate current difficulties, including a combination of relying on friends and avoiding difficult social situations or activities. However, these coping mechanisms come with compromises, and LGBTQIA+ community organizers and AT designers can do more to address these issues. Promising future directions include (1) educating community members about disability culture, AT use, and intersectionality and (2) creating more inclusive and affordable AT and pathways to accessing them. Below, we discuss these ideas in greater detail.

5.1 Opportunities for Community Education on Disability, LGBTQIA+ Culture, AT Use, and Intersectionality

Our findings underscore the importance of considering the intersecting identities of LGBTQIA+ people with disabilities when designing AT. Accounting for the unique experiences and challenges faced by this population, designers can create AT that better supports and acknowledges their specific needs. The intersectionality of disability and LGBTQIA+ cultures presents unique challenges, particularly concerning equitable access to AT. Both LGBTQIA+ and disabled individuals face systemic economic barriers that can exacerbate the difficulties in accessing necessary resources and services [2, 3]. The marginalization of LGBTQIA+ people with disabilities can compound existing discrimination and systemic barriers [ibid].

Our findings reveal that social stigma surrounding disability and AT use can pose a considerable challenge for LGBTQIA+ individuals with disabilities in community spaces. Participants in our study reported feeling self-conscious about using AT in community center settings due to concerns about being perceived as different or drawing unwanted attention to their disabilities. Addressing these challenges requires further community education about disability, LGBTQIA+ culture, AT use, and intersectionality. The need for education was echoed by P8, who shared, “[We need]... better education about disability. [The community center] could just hand out flyers every other weekend... to people in the community to expand the knowledge and also to share how... to treat people, and also what to expect [at the center].” Given their ability to connect with the community, LGBTQIA+ community centers can be vital in educating community members. Educational initiatives, such as workshops, seminars, and support groups, can be used to raise awareness of the unique experiences and needs of LGBTQIA+ individuals with disabilities [29]. These programs can further help challenge misconceptions and reduce the stigma associated with

disability [ibid]. Furthermore, mindful design, based on active involvement and feedback from participants with disabilities, could potentially help alleviate many barriers to AT use [78].

Participants in our study conveyed their experiences of relying on friends to share AT devices or provide assistance in lieu of using AT, highlighting the importance of community-building in LGBTQIA+ centers, where individuals can establish supportive networks to help overcome these challenges. Moreover, our study participants emphasized the importance of relying on friends and support networks to navigate the barriers posed by social stigma and AT limitations. Friends offered emotional support, practical assistance, and camaraderie in the face of social and physical difficulties, helping individuals with disabilities feel more comfortable and confident in using AT or seeking alternative solutions. Friends and support networks can be both a valuable resource for identity work [24] and a crucial stop-gap solution for the disparities in AT affordability and availability faced by many in the LGBTQIA+ community. Community center organizers could further consider providing training and resources on disability etiquette and allyship to promote a supportive and inclusive environment [102].

Importantly, while the strength of social connections and educational opportunities offered by community spaces are essential, there is a need to consider a more encompassing, holistic perspective on accessibility. Such an approach extends beyond the physical bounds of the environment and touches upon the overall experience of engaging with the community. P1 underscored the need for accommodations beyond the community space, mentioning their desire for transportation, *“with the provisions of accommodations like transportation...[it] would open up the possibilities of having people from far distances [participate in the community space].”* This sentiment serves as a reminder that accessibility should encompass not only the physical adaptations within a space but also the entire journey and the experiences encountered along the way.

5.2 Designing More Inclusive and Affordable AT

To address AT inclusivity and affordability, designers should actively engage LGBTQIA+ individuals with disabilities in the development and evaluation of AT through participatory design methods [37, 39, 73, 83, 84]. This collaborative approach can help identify unique needs and preferences and uncover potential barriers to access and use that may not be apparent to designers without similar lived experiences or identities aligning with the participants of this study [17, 54]. Our findings further emphasize the need for AT that supports social interactions and participation in community center activities. Our participants reported that existing AT was not always well-suited to the types of activities and events they were interested in participating in. Designers should consider creating AT that facilitates seamless engagement in these settings, promoting inclusion and reducing the risk of social isolation for individuals with disabilities.

To bridge the harmful gap between disability and LGBTQIA+ cultures and to promote more equitable access to AT, LGBTQIA+ community centers can leverage their position as *trusted* organizations to facilitate connections with disability resources and support systems. Through collaboration with local disability organizations and advocacy groups, community centers can help provide the

information and resources necessary to navigate the challenges associated with AT access and affordability [45]. Additionally, community centers can advocate for policy changes and funding opportunities to support developing and providing low-cost, accessible AT for LGBTQIA+ individuals with disabilities [20, 92].

The cost of AT can be a significant barrier for many, as these technologies can be expensive, and marginalized communities may have limited financial resources due to systemic economic barriers [101]. Innovations such as open-source hardware and software, as well as advancements in 3D printing and digital fabrication technologies, have the potential to reduce costs and increase customization of AT devices but still often remain out of reach of most individuals due to limited availability [36, 41, 48]. Even those with the financial means may struggle to find options within their budget, forcing those who ordinarily rely on AT to seek support from others, such as family members or friends [32]. However, this is not always feasible or reliable, as support may not always be available when needed. Our findings highlight the importance of considering these intersectional identities to better understand and address the specific challenges faced by LGBTQIA+ individuals with disabilities, including instances where participants reported the high costs of AT as a barrier to obtaining necessary devices and support.

Our findings reveal that social stigma surrounding disability and AT use can pose a considerable challenge for LGBTQIA+ individuals with disabilities. Participants in our study reported feeling self-conscious about using AT in community center settings due to concerns about being perceived as different or drawing unwanted attention to their disabilities. This fear of judgment or discrimination can deter individuals from using AT, even when it is crucial for their participation and independence [97]. These experiences align with the broader discourse on the visibility of disability in social spaces and the need for AT to balance functionality with aesthetic appeal [27, 95]. The reliance on friends aligns with the interdependence framework, wherein individuals with disabilities and their communities work together to address the challenges they face [6]. Our findings revealed that fostering interdependence can be a valuable approach for community centers to address the challenges faced by LGBTQIA+ individuals with disabilities. While these strategies are helpful, and centers can provide more training, scaffolding, or explicit instructions in supporting them, we invite community organizers to inquire why participants need to develop these strategies and what happens to those who are not "lucky" enough to be able to practice them.

6 LIMITATIONS AND FUTURE WORK

Our study centered exclusively on the experiences of LGBTQIA+ individuals with disabilities who have used community centers in the U.S., which inherently introduces a geographical limitation to our findings. The socio-cultural and legislative landscape within the U.S. context may not be representative of other global settings, which potentially limits the transferability of our findings to LGBTQIA+ individuals with disabilities living in other geographical contexts. Future research should extend this line of inquiry to various global regions to obtain a more comprehensive understanding of the experiences of LGBTQIA+ individuals with disabilities in other regions of the world.

We further acknowledge that our study did not directly compare the accessibility issues and experiences of LGBTQIA+ individuals with disabilities with those of individuals outside of this community. Although this was not our study's primary goal, we recognize that comparing AT issues for individuals inside and outside the LGBTQIA+ community would be a valuable contribution to this discourse. Creating a diagram or visualization to illustrate the similarities and differences in experiences could offer a nuanced understanding of AT issues between differing communities. We advocate for future studies to fill this gap in the literature by offering a more nuanced comparison of the experiences and needs of diverse communities.

Additionally, our study focused solely on participants who have used community centers, thereby possibly omitting insights from those who do not currently use these facilities. We advocate for future studies that include these individuals to capture a broader range of experiences. We also relied solely on self-reported experiences without incorporating direct observations or evaluations of community centers and their structures. Future research could incorporate observational data or community center evaluations to complement and build upon our findings. Moreover, while we have made efforts to be inclusive in our approach, we recognize that our study may not fully address the unique challenges of different types and severity of disabilities. We stress the need for future work to investigate more extensively the distinct experiences and needs of individuals with a broader range of disabilities.

Despite these limitations, we hope our study can serve as a foundation for future research exploring the intersectional experiences and systemic barriers that shape the lives of LGBTQIA+ people with disabilities within the U.S. and beyond.

7 CONCLUSION

Our study explored the experiences and challenges faced by LGBTQIA+ people with disabilities within community centers. We employed a qualitative research methodology, interviewing participants who have used LGBTQIA+ centers and providing insights into their lived experiences and barriers to navigating these spaces. We specifically identified several barriers to accessing and using AT, including social stigma, cost, and limitations in AT design. We also highlighted the crucial role of friends and support networks in helping individuals navigate these barriers and underscored the significance of promoting interdependence in community centers. Our findings further emphasized the importance of community-building, fostering interdependence, and creating inclusive spaces for LGBTQIA+ individuals with disabilities.

We encourage community centers to collaborate with disability organizations and advocacy groups to create an inclusive and welcoming environment for LGBTQIA+ individuals with disabilities. Through these community-building mechanisms, community spaces can help people with disabilities overcome the barriers related to AT use. Creating lasting change requires systemic solutions and policy interventions to ensure that all individuals, regardless of their background or identity, have equitable access to the resources and services they need to thrive.

We ultimately stress the importance of recognizing and addressing the intersectionality of LGBTQIA+ and disability identities to

create more equitable and inclusive spaces for all. Through a culture of empathy, understanding, and collaboration, community organizers and AT designers can work together to break down barriers and ensure that everyone, regardless of their background or identity, has the opportunity to thrive and fully participate in their communities.

ACKNOWLEDGMENTS

We thank all participants for sharing their experiences and contributing their time to this study. We recognize the difficulties and challenges that some participants may have faced in discussing their experiences, and we are grateful for their willingness to share and contribute to this study. Their openness and honesty have been instrumental in highlighting the experiences of those in the LGBTQIA+ community with disabilities. We also thank our anonymous reviewers for their valuable time, feedback, and suggestions.

REFERENCES

- [1] Dane Acena and Guo Freeman. 2021. "In My Safe Space": Social Support for LGBTQ Users in Social Virtual Reality. In *Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems* (Yokohama Japan). ACM, New York, NY, USA, 1–6. <https://doi.org/10.1145/3411763.3451673> 2023-02-20.
- [2] Azza Altiraifi. 2019. *Advancing Economic Security for People With Disabilities*. <https://www.americanprogress.org/article/advancing-economic-security-people-disabilities/> 2023-04-23.
- [3] M.V. Lee Badgett, Soon Kyu Choi, and Bianca D.M. Wilson. 2020. LGBT Poverty in the United States. In *The State of Families* (1 ed.), Jennifer A. Reich (Ed.). Routledge, 385–387. <https://doi.org/10.4324/9780429397868-75> 2023-04-23.
- [4] G. Barbareschi, C. Aranda Jan, M. Nique, F. Ramos Barajas, and C. Holway. 2019. Mobile Phones as Assistive Technologies: Gaps and Opportunities. <https://at2030.org/wp-content/uploads/sites/51/2019/08/Mobile-Phones-as-Assistive-Technologies-Gaps-and-Opportunities.pdf> 2023-04-14.
- [5] Elizabeth Barnes. 2016. *The minority body: A theory of disability*. Oxford University Press.
- [6] Cynthia L. Bennett, Erin Brady, and Stacy M. Branham. 2018. Interdependence as a Frame for Assistive Technology Research and Design. In *Proceedings of the 20th International ACM SIGACCESS Conference on Computers and Accessibility* (Galway Ireland). ACM, 161–173. <https://doi.org/10.1145/3234695.3236348> 2023-04-22.
- [7] Cynthia L. Bennett, Cole Gleason, Morgan Klaus Scheuerman, Jeffrey P. Bigham, Anhong Guo, and Alexandra To. 2021. "It's Complicated": Negotiating Accessibility and (Mis)Representation in Image Descriptions of Race, Gender, and Disability. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (Yokohama, Japan) (CHI '21). Association for Computing Machinery, New York, NY, USA, Article 375, 19 pages. <https://doi.org/10.1145/3411764.3445498>
- [8] Cynthia L. Bennett and Os Keyes. 2020. What is the point of fairness? Disability, AI and the complexity of justice. *ACM SIGACCESS Accessibility and Computing* 125 (2020), 1–1.
- [9] Lisa Bowleg, Jennifer Huang, Kelly Brooks, Amy Black, and Gary Burkholder. 2003. Triple Jeopardy and Beyond: Multiple Minority Stress and Resilience Among Black Lesbians. *Journal of Lesbian Studies* 7, 4 (2003), 87–108. https://doi.org/10.1300/J155v07n04_06 Publisher: Taylor & Francis Ltd.
- [10] Stacy M. Branham and Shaun K. Kane. 2015. Collaborative Accessibility: How Blind and Sighted Companions Co-Create Accessible Home Spaces. (2015), 2373–2382. <https://doi.org/10.1145/2702123.2702511>
- [11] Stacy M. Branham and Shaun K. Kane. 2015-10-26. The Invisible Work of Accessibility: How Blind Employees Manage Accessibility in Mixed-Ability Workplaces. (2015-10-26), 163–171. <https://doi.org/10.1145/2700648.2809864>
- [12] Virginia Braun and Victoria Clarke. 2006. Using thematic analysis in psychology. *Qualitative research in psychology* 3, 2 (2006), 77–101.
- [13] Virginia Braun and Victoria Clarke. 2019. Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health* 11, 4 (2019), 589–597. <https://doi.org/10.1080/2159676X.2019.1628806> Publisher: Routledge _eprint: <https://doi.org/10.1080/2159676X.2019.1628806>.
- [14] Kate Caldwell. 2010. We Exist: Intersectional In/Visibility in Bisexuality & Disability. *Disability Studies Quarterly* 30, 3 (2010). <https://doi.org/10.18061/dsq.v30i3.4.1273> Number: 3/4.
- [15] Djemila Carron and Paul O'Keeffe. [n.d.]. Education Can't Wait for LGBTQ Refugees? Exploring Inclusion and Access to Higher Education in Kakuma Refugee Camp. In *Migration, Displacement, and Higher Education: Now What?*, Brittany Murray, Matthew Brill-Carl, and Maria Höhn (Eds.). Springer International Publishing, 75–85. https://doi.org/10.1007/978-3-031-12350-4_6
- [16] George Chauncey. 2019. *Gay New York: Gender, Urban Culture, and the Making of the Gay Male World, 1890-1940* (2. trade paperback edition ed.). BasicBooks, New York.
- [17] Susan E. Collins, Seema L. Clifasefi, Joey Stanton, Kee J. E. Straits, Patricia Rodriguez Espinosa, Michele P. Andrasik, Kimberly A. Miller, Victoria E. Orfaly, Eleanor Gil-Kashiwabara, Andel V. Nicasio, Starlyn M. Hawes, Lonnie A. Nelson, Bonnie M. Duran, and Nina Wallerstein. 2018. Community-based Participatory Research (CBPR): Towards Equitable Involvement of Community in Psychology Research. *The American psychologist* 73, 7 (2018), 884–898. <https://doi.org/10.1037/amp0000167> 2023-04-23.
- [18] Kimberle Crenshaw. 1995. Mapping the margins. *Critical race theory: The key writings that formed the movement* (1995), 357–383.
- [19] Ariel Decoster and Pieter Cannoot. 2020. The abolition of sex/gender registration in the age of gender selfdetermination: An interdisciplinary, queer, feminist and human rights analysis. *International Journal of Gender, Sexuality and Law* 1, 1 (2020).
- [20] National Council of Disability. 1993. *Study on the Financing of Assistive Technology Devices and Services for Individuals with Disabilities*. <https://ncd.gov/2023-04-23>.
- [21] Paul Dourish. 2006. Re-Space-Ing Place: "Place" and "Space" Ten Years On. *Conference on Computer Supported Cooperative Work* (2006), 299–308. <https://doi.org/10.1145/1180875.1180921>
- [22] Paul Dourish and Genevieve Bell. 2007. The Infrastructure of Experience and the Experience of Infrastructure: Meaning and Structure in Everyday Encounters with Space. *Environment and Planning B-planning & Design* 34, 3 (2007), 414–430. <https://doi.org/10.1068/b32035t>
- [23] Martin B. Duberman. 2019. *Stonewall: The Definitive Story of the LGBTQ Rights Uprising That Changed America* (first revised plume trade paperback edition ed.). Plume, an imprint of Penguin Random House LLC, New York.
- [24] Brianna Dym, Jed R. Brubaker, Casey Fiesler, and Bryan Semaan. 2019-11-07. "Coming Out Okay": Community Narratives for LGBTQ Identity Recovery Work. *Proceedings of the ACM on Human-Computer Interaction* 3 (2019-11-07), 154. <https://doi.org/10.1145/3359256>
- [25] Justine E Egner. 2019. "The disability rights community was never mine": Neuroqueer disidentification. *Gender & Society* 33, 1 (2019), 123–147.
- [26] Jennifer Esposito and Venus E. Evans-Winters. 2022. *Introduction to Intersectional Qualitative Research* (first edition ed.). SAGE Publications, Inc.
- [27] Heather A. Faucett, Kate E. Ringland, Amanda L. L. Cullen, and Gillian R. Hayes. 2017-10-25. (In)Visibility in Disability and Assistive Technology. *ACM Transactions on Accessible Computing* 10, 4 (2017-10-25), 1–17. <https://doi.org/10.1145/3132040> 2023-02-22.
- [28] Jean Faugier and Mary Sargeant. 1997. Sampling hard to reach populations. *Journal of Advanced Nursing* 26, 4 (1997), 790–797. <https://doi.org/10.1046/j.1365-2648.1997.00371.x> _eprint: <https://onlinelibrary.wiley.com/doi/pdf/10.1046/j.1365-2648.1997.00371.x>.
- [29] Human Rights Campaign Foundation. 2020. Advocating for LGBTQ Students with Disabilities. https://hrc-prod-requests.s3-us-west-2.amazonaws.com/LGBTQ-Students-wDisabilities_052521.pdf?mtime=20210602135227&focal=none
- [30] Karen I. Fredriksen-Goldsen, Jane M. Simoni, Hyun-Jun Kim, Keren Lehavot, Karina L. Walters, Joyce Yang, and Charles P. Hoy-Ellis. 2014. The Health Equity Promotion Model: Reconceptualization of Lesbian, Gay, Bisexual, and Transgender (LGBT) Health Disparities. *The American journal of orthopsychiatry* 84, 6 (2014), 653–663. <https://doi.org/10.1037/ort0000030> 2023-04-17.
- [31] Rosemarie Garland-Thomson. [n.d.]. The Story of My Work: How I Became Disabled. 34, 2 ([n.d.]). <https://doi.org/10.18061/dsq.v34i2.4254> Number: 2.
- [32] Nanette Goodman, Michael Morris, Zachary Morris, and Stephen McGarity. 2020. The Extra Costs of Living with a Disability in the U.S. — Resetting the Policy Table. (2020).
- [33] Jamie M. Grant, Lisa A. Mottet, Justin Tanis, Jack Harrison, Jody L. Herman, and Mara Keisling. 2011. *Injustice at Every Turn: A Report of the National Transgender Discrimination Survey*. https://transequity.org/sites/default/files/docs/resources/NTDS_Report.pdf 2023-04-17.
- [34] Oliver L. Haimson, Jed R. Brubaker, Lynn Dombrowski, and Gillian R. Hayes. 2015. Disclosure, Stress, and Support During Gender Transition on Facebook. *Conference on Computer Supported Cooperative Work* (Feb. 2015), 1176–1190. <https://doi.org/10.1145/2675133.2675152> MAG ID: 2087812492 S2ID: 6f5d7adc9ec962ad808a7815ec9897f641e5e2f.
- [35] Oliver L. Haimson, Jed R. Brubaker, Lynn Dombrowski, and Gillian R. Hayes. 2016. Digital Footprints and Changing Networks During Online Identity Transitions. *International Conference on Human Factors in Computing Systems* (2016), 2895–2907. <https://doi.org/10.1145/2858036.2858136>
- [36] Foad Hamidi, Melanie Baljko, Toni Kunic, and Ray Feraday. 2015. TalkBox: a DIY communication board case study. *Journal of Assistive Technologies* (2015).
- [37] Foad Hamidi, Patrick Mbullo, Deurence Onyango, Michaela Hynie, Susan McGrath, and Melanie Baljko. 2018. Participatory design of DIY digital assistive technology in Western Kenya. In *Proceedings of the Second African Conference for Human Computer Interaction: Thriving Communities*. 1–11.

- [38] Christina B. Hanhardt. 2013. *Safe Space: Gay Neighborhood History and the Politics of Violence*. Duke University Press, Durham, NC.
- [39] Jean Hardy and Stefani Vargas. 2019. Participatory Design and the Future of Rural LGBTQ Communities. (2019), 195–199. <https://doi.org/10.1145/3301019.3323894> MAG ID: 2950358367.
- [40] Gregory M. Herek. 2009. Sexual Stigma and Sexual Prejudice in the United States: A Conceptual Framework. In *Contemporary Perspectives on Lesbian, Gay, and Bisexual Identities*, Debra A. Hope (Ed.). Vol. 54. Springer New York, New York, NY, 65–111. https://doi.org/10.1007/978-0-387-09556-1_4 2023-04-14.
- [41] Erin Higgins, William Berkley Easley, Karen L. Gordes, Amy Hurst, and Foad Hamidi. 2022. Creating 3D Printed Assistive Technology Through Design Shortcuts: Leveraging Digital Fabrication Services to Incorporate 3D Printing into the Physical Therapy Classroom: Leveraging Digital Fabrication Services to Incorporate 3D Printing into the Physical Therapy Classroom. In *Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility* (Athens, Greece) (ASSETS '22). Association for Computing Machinery, New York, NY, USA, Article 34, 16 pages. <https://doi.org/10.1145/3517428.3544816>
- [42] Karen Hughes, Mark A. Bellis, Lisa Jones, Sara Wood, Geoff Bates, Lindsay Eckley, Ellie McCoy, Christopher Mikton, Tom Shakespeare, and Alana Officer. 2012. Prevalence and risk of violence against adults with disabilities: a systematic review and meta-analysis of observational studies. *Lancet (London, England)* 379, 9826 (2012), 1621–1629. [https://doi.org/10.1016/S0140-6736\(11\)61851-5](https://doi.org/10.1016/S0140-6736(11)61851-5)
- [43] Amy Hurst and Jasmine Tobias. 2011. Empowering Individuals with Do-It-Yourself Assistive Technology. In *The Proceedings of the 13th International ACM SIGACCESS Conference on Computers and Accessibility*. ACM, Dundee Scotland, UK, 11–18. <https://doi.org/10.1145/2049536.2049541> 2023-04-18.
- [44] Rob Imrie. 2005. *Accessible Housing: Quality, Disability and Design* (1st edition ed.). Routledge, London ; New York.
- [45] Maryland Center for Developmental Disabilities at Kennedy Krieger Institute. 2022. Becoming Anti-Ableist: A Disability Justice Informed Approach to Supporting the Disability Community. <https://www.kennedykrieger.org/sites/default/files/library/documents/community/maryland-center-for-developmental-disabilities-mcdd/Anti-Ableist%20and%20Inclusive%20Practice%20Resource%20Guide%20FINAL2.pdf> 2023-04-23.
- [46] Alison Kafer. 2013. *Feminist, queer, crip*. Indiana University Press.
- [47] Cheryl Kalberer. 2019. LGBTQ+ Living History: The Transformative '60s and '70s. <https://alumni.berkeley.edu/lgbtq-living-history-60-70/>. 2023-04-14.
- [48] Antreas Kantaros, Olaf Diegel, Dimitrios Piromalis, Georgios Tsaramiris, Alaa Omar Khadidos, Adil Omar Khadidos, Fazal Qudus Khan, and Sadeeq Jan. 2022. 3D printing: Making an innovative technology widely accessible through makerspaces and outsourced services. *Materials Today: Proceedings* 49 (2022), 2712–2723. <https://doi.org/10.1016/j.matpr.2021.09.074> 2023-04-24.
- [49] M. Kenney. 2001. *Mapping Gay L.A.: The Intersection of Place and Politics*. Temple University Press. <https://books.google.com/books?id=jCLBq04FbDoC>
- [50] Os Keyes. 2018. The Misgendering Machines: Trans/HCI Implications of Automatic Gender Recognition. *Proceedings of the ACM on Human-Computer Interaction* 2 (2018), 88:1–88:22. Issue CSCW. <https://doi.org/10.1145/3274357> 2022-10-30.
- [51] Os Keyes. 2020. Automating autism: Disability, discourse, and artificial intelligence. *The Journal of Sociotechnical Critique* 1, 1 (2020), 8.
- [52] Ezekiel Kimball, Annemarie Vaccaro, Nina Tissi-Gassoway, S. Denny Bobot, Barbara M. Newman, Adam Moore, and Peter F. Troiano. 2018. Gender, Sexuality, & (Dis)Ability: Queer Perspectives on the Experiences of Students with Disabilities. *Disability Studies Quarterly* 38, 2 (2018). <https://doi.org/10.18061/dsq.v38i2.5937> Number: 2.
- [53] David B. King, Norm O'Rourke, and Anita DeLongis. 2014. Social media recruitment and online data collection: A beginner's guide and best practices for accessing low-prevalence and hard-to-reach populations. *Canadian Psychology / Psychologie canadienne* 55 (2014), 240–249. <https://doi.org/10.1037/a0038087> Place: US Publisher: Educational Publishing Foundation.
- [54] Lynn Kirabo, Elizabeth Jeanne Carter, Devon Barry, and Aaron Steinfeld. 2021. Priorities, Technology, & Power: Co-Designing an Inclusive Transit Agenda in Kampala, Uganda. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* (Yokohama Japan). ACM, 1–11. <https://doi.org/10.1145/3411764.3445168> 2023-04-27.
- [55] Rob Kitchin. 1998. 'Out of Place', 'Knowing One's Place': Space, Power and the Exclusion of Disabled People. *Disability & Society - DISABIL SOC* 13 (June 1998), 343–356. <https://doi.org/10.1080/09687599826678>
- [56] C Logie and T M Gadalla. 2009. Meta-Analysis of Health and Demographic Correlates of Stigma towards People Living with HIV. *AIDS care* 21, 6 (2009), 742–753. <https://doi.org/10.1080/09540120802511877> pmid:19806490 2023-04-04.
- [57] Edward F. Lomash, Tabria D. Brown, and M. Paz Galupo. [n.d.]. "A Whole Bunch of Love the Sinner Hate the Sin": LGBTQ Microaggressions Experienced in Religious and Spiritual Context. 66, 10 ([n.d.]), 1495–1511. <https://doi.org/10.1080/00918369.2018.1542204> Publisher: Taylor & Francis Ltd.
- [58] Leanna Lucero. 2017. Safe Spaces in Online Places: Social Media and LGBTQ Youth. *Multicultural Education Review* 9, 2 (2017), 117–128. <https://doi.org/10.1080/2005615x.2017.1313482>
- [59] Jimmie Manning and Danielle M Stern. 2018. Heteronormative bodies, queer futures: Toward a theory of interpersonal panopticism. *Information, communication & society* 21, 2 (2018), 208–223.
- [60] Deborah Marks. 1997. Models of disability. *Disability and rehabilitation* 19, 3 (1997), 85–91.
- [61] Alexander J. Martos, Patrick A. Wilson, and Ilan H. Meyer. 2017. Lesbian, Gay, Bisexual, and Transgender (LGBT) Health Services in the United States: Origins, Evolution, and Contemporary Landscape. *PLoS One* 12, 7 (2017), e0180544. <https://doi.org/10.1371/journal.pone.0180544> pmid:28692659
- [62] Krista McQueeney. 2009. "We Are God's Children, Y'All": Race, Gender, and Sexuality in Lesbian- and Gay-Affirming Congregations. *Social Problems* 56, 1 (Feb. 2009), 151–173. <https://doi.org/10.1525/sp.2009.56.1.151> 2023-04-14.
- [63] Robert McRuer. 2003. As Good As It Gets Queer Theory and Critical Disability. *GLQ: A Journal of Lesbian and Gay Studies* 9, 1 (2003), 79–105.
- [64] Robert McRuer and Abby L Wilkerson. 2003. Desiring disability: Queer theory meets disability studies. *GLQ: A Journal of Lesbian and Gay Studies* (2003).
- [65] Maartje De Meulder and Hilde Haualand. 2021. Sign Language Interpreting Services: A Quick Fix for Inclusion? *Translation and Interpreting Studies. The Journal of the American Translation and Interpreting Studies Association* 16, 1 (2021), 19–40. <https://doi.org/10.1075/tis.18008.dem> 2023-03-26.
- [66] Ilan H. Meyer. 2003. Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence. *Psychological bulletin* 129, 5 (Sept. 2003), 674–697. <https://doi.org/10.1037/0033-2909.129.5.674> 2023-04-14.
- [67] Ilan H. Meyer and Patrick A. Wilson. 2009. Sampling Lesbian, Gay, and Bisexual Populations. *Journal of Counseling Psychology* 56 (2009), 23–31. <https://doi.org/10.1037/a0014587>
- [68] Kathleen K. Miller, Ryan J. Watson, and Marla E. Eisenberg. [n.d.]. The Intersection of Family Acceptance and Religion on the Mental Health of LGBTQ Youth. 1, 1 ([n.d.]), 27–42. <https://doi.org/10.1891/LGBTQ.2019-0005>
- [69] Mia Mingus. 2011. *Access Intimacy: The Missing Link*. <https://leavingevidence.wordpress.com/2011/05/05/access-intimacy-the-missing-link/> 2023-04-21.
- [70] Sophie Mitra, Aleksandra Posarac, and Brandon C. Vick. 2011. Disability and Poverty in Developing Countries: A Snapshot from the World Health Survey. *SSRN Electronic Journal* (2011). <https://doi.org/10.2139/ssrn.1908128> 2023-04-17.
- [71] Aparna Moitra, Megh Marathe, Syed Ishtiaque Ahmed, Syed Ishtiaque Ahmed, and Priyank Chandra. 2021. Negotiating Intersectional Non-Normative Queer Identities in India. (2021). <https://doi.org/10.1145/3411763.3451822>
- [72] N. Nakkeeran and Barathi Nakkeeran. 2018. Disability, mental health, sexual orientation and gender identity: understanding health inequity through experience and difference. *Health Research Policy and Systems* 16, 1 (2018), 97. <https://doi.org/10.1186/s12961-018-0366-1> 2023-04-17.
- [73] Donald A. Norman. 2023. *Design for a better world: meaningful, sustainable, humanity centered*. The MIT Press.
- [74] Michael Oliver. 2013. The social model of disability: thirty years on. *Disability & Society* 28, 7 (Oct. 2013), 1024–1026. <https://doi.org/10.1080/09687599.2013.818773> MAG ID: 2087269573.
- [75] Joshua G. Parmenter, Renee V. Galliher, Elizabeth Wong, and D. Perez. 2021. An Intersectional Approach to Understanding LGBTQ+ People of Color's Access to LGBTQ+ Community Resilience. *Journal of Counseling Psychology* 68, 6 (Nov. 2021), 629–641. <https://doi.org/10.1037/cou0000578> 2023-04-14.
- [76] Ravi K. Perry and Aaron D. Camp. 2020. *Mobilizing the Invisible: Power and Marginality in the Black LGBTQ Community*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190228637.013.1299> 2023-03-16.
- [77] B. Phillips and H. Zhao. 1993. Predictors of Assistive Technology Abandonment. *Assistive technology: the official journal of RESNA* 5, 1 (1993), 36–45. <https://doi.org/10.1080/10400435.1993.10132205>
- [78] Halley P. Profta, Abigale Stangl, Laura Matuszewska, Sigrunn Sky, Raja Kushalnagar, and Shaun K. Kane. [n.d.]. "Wear It Loud": How and Why Hearing Aid and Cochlear Implant Users Customize Their Devices. 11, 3 ([n.d.]), 13:1–13:32. <https://doi.org/10.1145/3214382>
- [79] Zahy Ramadan, Maya F. Farah, and Lea El Essrawi. 2021. From Amazon.Com to Amazon.Love: How Alexa Is Redefining Companionship and Interdependence for People with Special Needs. *Psychology & Marketing* 38, 4 (2021), 596–609. <https://doi.org/10.1002/mar.21441> 2023-04-14.
- [80] Reese Rathjen. 2015. *Transgender Rights*. <https://www.thetaskforce.org/transgender-rights/> 2023-04-30.
- [81] David Rice. 2019. LGBTQ: The Communities within a Community. *Clinical Journal of Oncology Nursing* 23, 6 (2019), 668–671. <https://doi.org/10.1188/19.CJON.668-671> 2023-01-16.
- [82] Ellen D. B. Riggall and Sharon S. Rostovsky. 2014. *A Positive View of LGBTQ: Embracing Identity and Cultivating Well-Being* (reprint edition ed.). Rowman & Littlefield Publishers.
- [83] Kathryn E. Ringland and Christine T. Wolf. [n.d.]. Creating assistive technology in disabled communities, five years on: a reflection of neurodivergency and crafting accessible social spaces. 131 ([n.d.]), 1–5. <https://doi.org/10.1145/3507912.3507914>

- [84] Kathryn E. Ringland, Christine T. Wolf, LouAnne E. Boyd, Mark S. Baldwin, and Gillian R. Hayes. [n.d.]. Would You Be Mine: Appropriating Minecraft as an Assistive Technology for Youth with Autism. In *Proceedings of the 18th International ACM SIGACCESS Conference on Computers and Accessibility* (New York, NY, USA, 2016-10-23) (ASSETS '16). Association for Computing Machinery, 33–41. <https://doi.org/10.1145/2982142.2982172>
- [85] Ellen Samuels. [n.d.]. MY BODY, MY CLOSET: Invisible Disability and the Limits of Coming-Out Discourse. 9, 1 ([n.d.]), 233–255. <https://doi.org/10.1215/10642684-9-1-2-233>
- [86] Marcia J. Scherer. 2005. *Living in the State of Stuck: How Assistive Technology Impacts the Lives of People With Disabilities* (4th edition ed.). Brookline Books.
- [87] Kristin S. Scherrer. 2008. Coming to an Asexual Identity: Negotiating Identity, Negotiating Desire. *Sexualities* 11, 5 (2008), 621–641. <https://doi.org/10.1177/1363460708094269> 2023-04-17.
- [88] Morgan Klaus Scheuerman, Stacy M. Branham, and Foad Hamidi. 2018. Safe Spaces and Safe Places: Unpacking Technology-Mediated Experiences of Safety and Harm with Transgender People. *Proceedings of the ACM on Human-Computer Interaction* 2 (2018), 1–27. Issue CSCW. <https://doi.org/10.1145/3274424> 2023-03-17.
- [89] Morgan Klaus Scheuerman, Katta Spiel, Oliver L. Haimson, Foad Hamidi, and Stacy M. Branham. 2020. HCI Guidelines for Gender Equity and Inclusivity. Maryland Shared Open Access Repository. <https://doi.org/10.13016/M2NW1F-P0JX> 2023-04-20.
- [90] Ari Schlesinger, W. Keith Edwards, and Rebecca E. Grinter. 2017. Intersectional HCI: Engaging Identity through Gender, Race, and Class. In *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*. ACM, Denver Colorado USA, 5412–5427. <https://doi.org/10.1145/3025453.3025766> 2023-04-06.
- [91] Stephen Secules, Cassandra McCall, Joel Alejandro Mejia, Chanel Beebe, Adam S. Masters, Matilde L. Sánchez-Peña, and Martina Svyantek. 2021. Positionality practices and dimensions of impact on equity research: A collaborative inquiry and call to the community. *Journal of Engineering Education* 110, 1 (2021), 19–43.
- [92] K. D. Seelman. 1993. Assistive technology policy: a road to independence for individuals with disabilities. *The Journal of Social Issues* 49, 2 (1993), 115–136. <https://doi.org/10.1111/j.1540-4560.1993.tb00923.x>
- [93] Mark Sherry *. 2004. Overlaps and contradictions between queer theory and disability studies. *Disability & Society* 19, 7 (2004), 769–783. <https://doi.org/10.1080/0968759042000284231> Publisher: Routledge _eprint: <https://doi.org/10.1080/0968759042000284231>
- [94] Maryna Shevtsova. [n.d.]. Solidarity test: challenges of forced LGBTQ migration and activism in Central-Eastern European countries in the context of Russia's war on Ukraine. 0, 0 ([n.d.]), 1–23. <https://doi.org/10.1080/14616696.2023.2181372> Publisher: Routledge _eprint: <https://doi.org/10.1080/14616696.2023.2181372>
- [95] Kristen Shinohara, Cynthia L. Bennett, Wanda Pratt, and Jacob O. Wobbrock. 2018. Tenets for Social Accessibility: Towards Humanizing Disabled People in Design. *ACM Transactions on Accessible Computing* 11, 1 (March 2018), 6. <https://doi.org/10.1145/3178855> MAG ID: 2792307987 S2ID: 3a7b9f68378a640c4257cd618cbf027dd3a25b08.
- [96] Kristen Shinohara and Jacob O. Wobbrock. 2016. Self-Conscious or Self-Confident? A Diary Study Conceptualizing the Social Accessibility of Assistive Technology. *ACM Transactions on Accessible Computing* 8, 2 (2016), 1–31. <https://doi.org/10.1145/2827857> 2023-03-10.
- [97] Kristen Shinohara, Jacob O. Wobbrock, and Wanda Pratt. 2018. Incorporating Social Factors in Accessible Design. *International ACM SIGACCESS Conference on Computers and Accessibility* (2018), 149–160. <https://doi.org/10.1145/3234695.3236346>
- [98] Katta Spiel. 2021. "Why Are They All Obsessed with Gender?" — (Non)Binary Navigations through Technological Infrastructures. In *Designing Interactive Systems Conference 2021* (Virtual Event USA). ACM, 478–494. <https://doi.org/10.1145/3461778.3462033> 2022-09-26.
- [99] Patrick S. Sullivan, Christine M. Khosropour, Nicole Luisi, Matthew Amsden, Tom Coggia, Gina M. Wingood, and Ralph J. DiClemente. 2011. Bias in Online Recruitment and Retention of Racial and Ethnic Minority Men Who Have Sex with Men. *Journal of Medical Internet Research* 13, 2 (2011), e38. <https://doi.org/10.2196/jmir.1797> 2023-04-04.
- [100] Ashley Marie Walker and Michael A. DeVito. 2020. "More gay" fits in better": Intracommunity Power Dynamics and Harms in Online LGBTQ+ Spaces. *null* (2020). <https://doi.org/10.1145/3313831.3376497>
- [101] Courtney Ward-Sutton, Natalie F. Williams, Corey L. Moore, and Edward O. Manyibe. 2020. Assistive Technology Access and Usage Barriers Among African Americans With Disabilities: A Review of the Literature and Policy. *Journal of applied rehabilitation counseling* 51, 2 (2020), 115–133. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7985985/> 2023-04-23.
- [102] Student Disability Commission of the Associated Students of the University of Washington. 2021. Resources for Aspiring Allies of the Deaf/Disability Communities. https://docs.google.com/document/d/1tXye_IR1CIsJYoVw1OMh4LkMhpvOQc7gmzgM_XtMOE/edit?usp=sharing&usp=embed_facebook 2023-04-24.
- [103] Lauraine Wells. 2016. The #1 Sensory Disability. *Industrial Safety & Hygiene News* 50, 1 (Jan. 2016), 39–39. 2023-04-18.
- [104] Bianca D. M. Wilson, Gary W. Harper, Marco A. Hidalgo, Omar B. Jamil, Rodrigo Sebastián Torres, and M. Isabel Fernandez. 2010. Negotiating Dominant Masculinity Ideology: Strategies Used by Gay, Bisexual and Questioning Male Adolescents. *American journal of community psychology* 45, 1 (2010), 169–185. <https://doi.org/10.1007/s10464-009-9291-3> 2023-04-17.
- [105] Jacob O. Wobbrock, Shaun K. Kane, Krzysztof Z. Gajos, Susumu Harada, and Jon E. Froehlich. 2011. Ability-Based Design: Concept, Principles and Examples. *ACM Transactions on Accessible Computing* 3, 3 (April 2011), 9. <https://doi.org/10.1145/1952383.1952384> MAG ID: 2010361629.
- [106] Yichao Cui, Naomi Yamashita, and Yi-Chieh Lee. 2022. "We Gather Together We Collaborate Together": Exploring the Challenges and Strategies of Chinese Lesbian and Bisexual Women's Online Communities on Weibo. *Proceedings of the ACM on human-computer interaction* 6 (2022), 1–31. Issue CSCW2. <https://doi.org/10.1145/3555148>