Safety With Community: Technologies of Care, Connection, Collective Safety, and Mutual Aid for Transgender Black, Indigenous, and People of Color (TBIPOC)

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Abstract

Technology has the potential to enhance safety by supporting community-driven strategies. However, current safety technologies often narrowly frame safety as preventing violence, without incorporating the community-centered strategies essential to well-being for transgender, Black, Indigenous, and People of Color (TBIPOC). We conducted 22 interviews with TBIPOC individuals to understand their safety challenges, experiences navigating violence, and safety strategies. Our findings reveal that safety is not only the absence of harm but also the presence of trust, connection, collective care, and mutual aid. Participants emphasized survival resources like self-defense training and trans-specific spaces, alongside joy rooted in community and support. We argue that community is not separate from safety; it is its foundation. This work contributes fundamental knowledge about TBIPOCs' experiences and design implications for technologies that affirm TBIPOC lives. Designing for TBIPOC safety requires shifting toward community-centered technologies and non-technological approaches that prioritize lived experiences, mutual aid, and collective joy.

CCS Concepts

• **Human-centered computing → Human computer interaction (HCI)**; **Empirical studies in HCI**; • **Social and professional topics → Race and ethnicity**; **Gender**;

Keywords

transgender, TBIPOC, LGBTQIA+, race, intersectionality, safety, violence, community

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Content Warning

This paper contains material on the following: **transphobia, homophobia, racism, transmisogyny, and transmisogynoir**. We advise readers who may be sensitive to this content to be prepared for potentially distressing material.

1 Introduction

Technology holds the potential to enhance safety by supporting community-driven strategies, providing immediate support in emergencies, and creating spaces for affirmation and resilience. However, current safety technologies often frame safety narrowly as the reduction or prevention of violence, overlooking how safety also emerges through community-centered approaches to fostering joy and belonging, especially for marginalized groups. Existing technological and community-based resources often fail to adequately address the unique safety concerns of populations like transgender (hereafter referred to as "trans") [1] Black [2], Indigenous, and People of Color (TBIPOC), particularly when these resources rely on police involvement [40, 45, 58, 81, 101] or lack flexibility to accommodate fluid identities [51]. As a result, TBIPOC communities remain vulnerable to violence, isolation, and inadequate support systems. TBIPOC individuals and communities face compounded layers of

[1]The term "transgender" (hereafter referred to as "trans") describes individuals whose gender identity differs from the gender they were assigned at birth. While not all non-binary individuals identify as trans, we use "trans" in this paper to inclusively include non-binary people.
[2]In this paper, "Black" refers to people of African heritage across the diaspora, including those from Africa, the Caribbean, the Americas, Canada, Europe, and Asia. While racial discrimination in the U.S. often targets skin color rather than origin, we acknowledge the diversity within Black communities and that there is no single Black experience. We aim to respectfully represent the variety of perspectives within these communities.

discrimination and violence stemming from the intersections of their race, gender, and sexual identities [25, 58, 66]. In the United States, the threats to safety that TBIPOC individuals encounter are pervasive, manifesting both online and in the physical world, and range from physical violence and harassment to systemic oppression in healthcare, housing, and employment.

Given the severity of the challenges that TBIPOC individuals face, a comprehensive understanding of their lived experiences with violence, safety, and support systems could offer compelling insights into better integrating community-centered strategies into technologies. Therefore, we examined TBIPOC individualswithin the United States, experiences with violence and safety to better understand how they currently navigate violence and how the community may mitigate some of these challenges. We explore safety within the TBIPOC community, recognizing it as a network with its own community-driven strategies rooted in mutual aid, shared knowledge, and collective action that respond to systemic violence and foster survival. Following Spade's definition, we use "mutual aid" to refer to collective, community-led practices in which people support one another by sharing resources, labor, and care to meet unmet needs when institutions fail to do so [97]. Addressing the safety needs of TBIPOC populations through technology can also inform the design of safety technologies for gender and racial minorities more broadly, as bottom-up approaches ultimately benefit a wider range of marginalized communities. Thus, our work aims to understand and help address the ongoing violence and safety risks confronting the TBIPOC community. We ask the following research questions:

- RQ1: How do TBIPOC individuals build and sustain safety and joy through community-driven practices, in both digital and physical spaces, in the face of systemic violence and exclusion?
  - How do TBIPOC communities look out for each other and share resources to stay safe, cared for, and supported when systems fail them?
- RQ2: What design principles and features do TBIPOC individuals envision for safety technologies?

To answer these questions, we conducted 22 qualitative semi-structured interviews. Despite participants reporting the use of safety technologies, they highlighted numerous safety concerns, including physical violence, criminalization, and systemic barriers to healthcare and housing. However, we found that participants employed a variety of self-care practices and safety strategies to navigate unsafe spaces and protect themselves from harm. They also drew on the strength of their communities by leaning on trusted networks for support, safety, joy, and emotional care. Whether through mutual aid, shared safety planning, or simply having spaces to celebrate and connect, community relationships served as both a protective resource and a source of resilience in their daily lives. For TBIPOC individuals, safety always included mutual aid, as safety was viewed through a deeply communal lens. While others discussed the limitations of current safety technologies, many participants expressed the need for community-driven interventions such as self-defense courses, buddy systems, and financial support. Participants also proposed ideas for new technologies, such as interventions focused on location sharing, community resources, and trans-specific safety features. Previous HCI research on safety [20–22, 42, 48, 85, 115, 119] has mostly not forefronted TBIPOC people, and HCI research on the TBIPOC community has explored how individuals navigate violence and practice safety [99]; this work builds on that work by uncovering how systemic oppression, safety, joy, community and technology connect, especially through community-centered design.

We further extend prior work in HCI, DIS, and CHI by contributing: 1) empirical findings of challenges faced by TBIPOC individuals, including violence, criminalization, and systemic inequities; 2) expanding the understandings of safety and joy as interconnected experiences for TBIPOC communities; 3) illuminating the role of community as a critical safety infrastructure; and 4) a set of design implications and guidelines for designing inclusive, affirming tools aligned with the unique needs of the TBIPOC community.

2 Background And Related Work

Our work builds on prior HCI, DIS, and CSCW research that explores how communities impacted by violence use technologies to communicate and enhance safety. Yet, few studies focus specifically on TBIPOC safety. Therefore, we draw from gender studies to foreground intersectionality as central to analyzing TBIPOC safety. We draw from gender studies because the struggles of TBIPOC individuals, who experience both transphobia and racism, among other various oppressions, remain understudied in HCI. This section focuses on the experiences of TBIPOC individuals with both physical and online harm because these experiences are tangible, pervasive, and life-changing for those affected. We highlight the significant violence they encounter in physical spaces, compounded by systemic racism and transphobia, which often leads to poverty and vulnerable circumstances, such as sex work. While online platforms like social media pose distinct challenges, such as targeted harassment, they also offer essential spaces for community-building, activism, and mutual aid [89]. In our work, we emphasize the need for an intersectional approach to fully understand how overlapping oppressions shape the violence faced by TBIPOC individuals, while also considering how community and technology can play a role in fostering their safety.

2.1 The Current Landscape of Safety Technologies

Mainstream safety technologies often fail to meet the needs of TBIPOC individuals. Although a growing number of distress signaling apps are entering the market [33, 37, 112, 116], most remain limited in scope, relying on mechanisms like location tracking and default emergency contacts, typically law enforcement or public safety services [19, 98]. Such systems frequently intensify harm rather than mitigate it, often overlooking the structural conditions that create insecurity. They often shift the burden of safety onto users, requiring constant vigilance and self-surveillance [14, 15, 33, 37, 112, 116]. Additionally, the usage of frequent safety alerts can also increase users' "dysfunctional fear of crime," which undermines individuals' quality of life and mental health, instead of making them feel truly safer [20]. Fear of crime becomes dysfunctional when it starts to shape how people live their daily lives,

for example, refusing to attend community events or avoiding certain neighborhoods altogether just to feel safe [31, 46, 57]. For many TBIPOC users, especially those navigating criminalization and systemic bias, police involvement is not a source of safety but a potential threat [40, 45, 58, 81, 101]. Abolitionist scholarship reinforces these ideas, arguing for community-based crisis response models that replace punitive systems [64], and detailing how state systems such as child welfare perpetuate racialized surveillance and violence [88]. Such limitations call for collective safety measures without police involvement. Historically, collective safety and care networks have deep roots in Black, Latine, queer, and immigrant communities, where mutual aid has long been used to fill gaps left by state violence and structural neglect [35, 78, 108].

One area of research that is applicable to TBIPOC users is the subfield of "trans technologies." Trans technologies address the unique safety and representation needs of trans communities by supporting changeability, network separation, and identity fluidity [51]. Such technologies can reduce abuse risks and expand access to safe spaces otherwise denied to trans individuals [90]. For example, U-Signal is a wearable prototype enabling TBIPOC users to alert trusted contacts in danger, yet barriers like cost and tech literacy limit access, especially for queer and low-income communities [99]. Despite growing interest [99], there remains little research on safety tech specifically for TBIPOC and low-income users. To close the gap between design and real-world use, community involvement is essential throughout the design process [49], helping to ensure these tools reflect TBIPOC priorities like sharing locations with trusted contacts and avoiding police interactions [99].

Addressing these gaps requires a fundamental redesign grounded in autonomy, consent, and mutual care. Technology can support mutual aid and safety for marginalized groups, and even enable new forms of it [74], but because technological tools carry embedded politics and values that may conflict with community needs, systemic oppressions can limit how people use technological tools for mutual aid [79]. Moving away from law enforcement, frequently a source of harm for marginalized groups, technologies must instead facilitate access to self-determined support networks. This could involve notifying trusted contacts or designated guardians [99], such as chosen family, who are attuned to a user's context and needs. In the absence of such networks, community-based alert systems of vetted volunteers can redistribute care in ways that challenge mainstream platforms' approaches. These approaches echo earlier community infrastructures such as the Black Panther Party's free health programs, the Young Lords' public health and sanitation campaigns, AIDS Coalition to Unleash Power (ACT UP)'s activist care networks that offered emotional support and care for those suffering from illness, and broader transnational mutual aid practices that reject state-dependent models of safety [3, 35, 47, 78, 108]. Optional location sharing, while valuable in high-risk moments, also raises concerns about surveillance, technological precarity, and trade-offs like battery life [103]. Distress response must also move beyond emergencies: a buddy system for daily life—commutes, errands, or healthcare advocacy—positions care as an ongoing, relational practice rather than a reactive one.

2.2 Violence Against TBIPOC Individuals

Research in Gender Studies and Public Health shows that TBIPOC individuals face severe discrimination and violence due to intersecting racism, transphobia, and homophobia, which limit access to critical resources like employment, housing, and healthcare [75]. Since 2013, the Human Rights Campaign has tracked at least 365 murders of trans and gender non-conforming people; in 2024 alone, 77% of the at least 30 murder victims were people of color, and 53% were Black trans women [17]. Black trans women experience heightened, compounded risk of violence, or polyvictimization, exposing them to repeated and disproportionate violence. This violence highlights how societal perceptions of gender expression alongside racial identity influence access to justice [113].

This violence often intersects with technology. Perpetrators exploit mobile devices and social networks to stalk and surveil Black trans women in cases of intimate partner violence (IPV) [36, 70, 104], prompting calls for better practices and infrastructure to address technology-enabled IPV [38]. This trend is so pervasive that it has also been studied within the context of HCI, where researchers are exploring how technology can foster community resilience, such as with The Street Peace app co-designed by Dickinson et al. [29] to support street outreach workers facilitating transformative justice. Technology-mediated mental health pathways often fail users in crisis, especially those marginalized by race, gender, and class [83]. TBIPOC individuals have shown a strong interest in safety technologies [99], and HCI has the potential to help. However, further research is needed to understand how TBIPOC individuals experience safety and how technology can best support them [51, 99].

Online violence compounds these risks: a 2020 Pew survey found that Black (54%) and Hispanic (47%) victims believed they were targeted because of their race or ethnicity [107]. This risk is further pronounced for Black trans women and TBIPOC more broadly. The 2022 U.S. Transgender Survey found that 39% of respondents faced online harassment, 3% experienced physical violence, and many reported denial of equal treatment (9%), verbal harassment (30%), and family violence (11% of adults and 5% of youth) [59]. Surges of anti-LGBTQ+ legislation (574 bills introduced and 46 passed in 2024 alone) [2] have also heightened the hostility and danger faced by trans people. Addressing these risks requires interventions co-designed with TBIPOC communities to ensure relevance, accessibility, affordability, and data privacy [14, 25, 49]. Centering TBIPOC voices is essential for creating tools that genuinely support their safety and well-being.

Our work extends prior research by centering TBIPOC individuals' input and recommendations for how technology can help address the violence they face.

2.3 What is Safety for TBIPOC Individuals?

Safety, both online and offline, has become a central yet contested concern in HCI, and while existing technologies often equate it with preventing violence, we argue it must also encompass cultivating joy, connection, and well-being. HCI scholars employ multiple, sometimes contradictory, definitions of technologically-mediated "safety" [109]. Safety addresses physical, psychological, and sociotechnical dimensions, especially in relation to computing technologies [39, 86, 102]. Researchers have explored "digital safety,"

focusing on online behaviors that can cause harm, such as cyberbullying [4, 6], gender-based violence [11, 85, 94], transphobia [51, 90, 99], safety for sex workers [96] and misogynoir [77]. Algorithms and content moderation have been found to harm trans people as well [27, 61, 73, 105]. In addition, related HCI research tackles issues like mental health crises and self-harm, even if these topics aren't always explicitly framed as safety concerns [18]. Chordia et al. [22] suggest that designers reconceptualize safety from merely protecting communities towards also meeting their basic needs and building relationships within those communities to support accountability. Defining safety as being deeply relational and context-specific aligns best with our analysis [69]. Lu et al. [69]'s participants, Black residents living in Eastside Detroit, associated safety with both the absence of harm and a network of relationships with human and non-human actors [69]. Together, this body of work illustrates a broad and evolving understanding of safety in the digital age, with an emphasis on inclusivity and care.

Building on this prior work, we argue that safety is more than the absence of violence; it also involves fostering environments that support joy, connection, and well-being. Scholarship on Black, trans, and queer joy, argues that safety must also include opportunities for flourishing, creativity, and pleasure [77, 80, 95, 100, 111]. However, existing safety technologies often focus on reducing violence. To further address these issues, our research emphasizes fostering safer digital and physical experiences through community-centered practices and design interventions that not only reduce violence but also promote care and interdependence. This orientation resonates with longstanding mutual aid traditions that conceptualize safety as something produced collectively rather than delivered by formal institutions [28, 41, 47, 108]. We contribute to the literature by deepening our understanding of how TBIPOC communities practice safety in the online sphere and physical spaces, and how their proposed community-driven interventions support their safety practices and what they envision for the future. These visions are aligned with a broader lineage of radical care infrastructures, such as ACT UP's grassroots AIDS activism [3], the Young Lords' community health mobilizations [35], and other mutual aid formations that center autonomy, solidarity, and collective protection [78, 108].

Further, there is limited research on how transgender and non-binary individuals can use technology to enhance their safety, and even fewer tools are specifically designed to meet their needs [51, 99]. TBIPOC individuals face significant threats to their interpersonal safety, yet focus on addressing these threats is lacking in HCI. Trans individuals must navigate a complex balance between visibility and vulnerability online [44]. They often encounter harm from both intentional and unintentional actors targeting their communities [32, 90]. Trans and non-binary users also often face disproportionate content removals on social media platforms, even when their posts comply with the platforms' guidelines [27, 50, 61, 73]. Despite these findings on trans and non-binary individuals' struggles with their interpersonal safety, the struggles of TBIPOC individuals, who experience both transphobia and racism, among other various oppressions, remain understudied in HCI.

3 Methods

3.1 Semi-Structured Interviews

To address our research questions, we conducted 22 semi-structured interviews focusing on the online and physical experiences of unwanted behavior faced by TBIPOC community members and their strategies for responding to and navigating these encounters. The interviewer shared their own experiences with trans violence to foster trust and cultivate an open, honest space for meaningful dialogue with participants. This environment fostered a sense of comfort, allowing them to openly share personal experiences with violence and actively collaborate with the interviewer on brainstorming and designing technologies or concepts to address the challenges they encounter.

3.2 Participant Recruitment

We recruited participants online and offline, including social media platforms, digital flyers, outreach to LGBTQIA2S+ [3] organizations, and email listservs. Additionally, we distributed physical flyers and leveraged personal networks in areas with significant TBIPOC populations. To participate, individuals had to meet specific criteria: they needed to be trans, BIPOC, reside in the U.S., and have experienced violence related to their trans identity. We did not define violence; it was up to the participant to interpret and define their lived experiences for themselves. A screening survey was used to gather basic demographic information, such as gender, race, location, and experiences with violence, to confirm eligibility. Recruitment materials emphasized that a trans interviewer would conduct the interviews to ensure a more comfortable and affirming environment. Eligible participants were contacted via email to schedule interviews, receive compensation information, and complete the consent form. Recruitment concluded once we reached data saturation [16], with recurring themes consistently identified in our analysis.

3.3 Participant Demographics

The participant pool consisted of 50% trans women, 10% trans men, and 50% non-binary individuals. In terms of racial identity, 68% of participants identified as Black, 14% as Indigenous, and 36% as Asian, with some individuals identifying in multiple categories. The average age of participants was 24 years, ranging from 22 to 44. Participants received a $50 gift card or check as compensation for their time. Some participants selected their own pseudonyms, while others had pseudonyms assigned by the first author using a gender-neutral name generator. The study underwent a thorough review process and was granted exempt status by our university's Institutional Review Board (IRB).

3.4 Data Collection

The first author conducted 22 semi-structured Zoom interviews. While in-person interviews might have been easier for rapport-building, virtual interviews allowed for broad participant access. We gave participants the option to have their cameras on or off for comfort. Before starting, participants reviewed consent forms

[3] Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, Asexual, Two-Spirit, and the plus sign signifies additional identities and expressions not explicitly mentioned

Table 1: Participant demographics

Participant	Race/ethnicity	Gender	Age
Shuri	Black American	Nonbinary Trans Man	29
Wave	Filipina American	Trans Femme/Trans Woman/Bakla	22
Monica	Black/White American	Trans Woman	Not provided
Sage	Black American	Nonbinary	31
Erik	Black American	Nonbinary	31
Ororo	Black American with Caribbean influence	Nonbinary	27
Luna	Mixed Indigenous/Latine American	Nonbinary	29
Cass	Afro-Indigenous American	Nonbinary	25
Yukio	Japanese/White American	Trans Feminine	30
Jubilee	Asian American	Agender/Nonbinary	31
Kris	Black American	Trans Woman	30
Emerson	Black American	Nonbinary	Not provided
Miles	Black American	Nonbinary	26
Mahari	Southeast Asian & Filipina American	Trans Woman	31
Ironheart	Black/Native American	Trans Woman	34
Vixen	Black American	Trans Woman	34
Magic	Black and Filipino American	Nonbinary Trans Man	37
Sophie	Asian American	Trans Woman	27
Saxon	Black American	Nonbinary Trans Woman	32
Shay	Blindian (Black/Indian American)	Trans Woman	44
Nao	Black American	Trans Woman	20
Jae	Black-Filipino American	Nonbinary	27

on their own, learned about the study's goals, and had the opportunity to ask questions about the consent form and the overall study. The interviews averaged 55 minutes (38-78 minutes) and were conducted between June and November 2023. The interviews explored participants' experiences with transphobic violence, safety practices, self-care strategies, challenges faced by the TBIPOC community, and their thoughts related to effective interventions. All interviews were recorded and professionally transcribed for analysis.

After the first 3–4 interviews, the research team revised the protocol to better capture participants' insights. Seven guiding questions were used, with follow-ups to explore safety experiences, self-care practices, and the role of technology. Participants shared examples of safe spaces, their strategies for managing unsafe situations, and experiences navigating transphobic spaces. Beyond discussing violence and safety, participants actively contributed ideas for interventions, both technological and non-technological, that could enhance the safety and well-being of the TBIPOC community. The first author, a trans nonbinary, Black, and queer individual, shared their own intersecting experiences, challenging traditional research norms of neutrality, particularly those shaped by whiteness [53].

3.5 Positionality

Drawing from standpoint theory [52], we understand that knowledge is inherently shaped by the social locations and lived experiences of those who generate it. With this in mind, we intentionally foreground the identities, privileges, and forms of oppression that shape our positionalities throughout the research process. The research team comprises individuals of varying racial and gender identities, including Black, Asian, White, cisgender, and trans members; most of the authors are TBIPOC individuals as well.

The first author, a Black, trans nonbinary scholar and member of the TBIPOC community, carried out all participant interviews and played a pivotal role in shaping the research methodology. Their positionality was not a backdrop but an integral component of the research itself. Living at the intersections of anti-Blackness and transphobia, the first author brought an epistemic perspective that created a distinct relational closeness to participants. Within academic spaces where such intersecting identities are rarely represented, their presence offered more than shared identity markers, it conveyed care, understanding, and mutual recognition.

Participants often described a sense of emotional safety and relief in speaking with someone who intuitively understood their realities. This relational proximity opened space for deeper and more nuanced disclosures, while also highlighting the emotional labor that marginalized participants frequently endure when engaging with researchers unfamiliar with their lived realities. The first author's embodiment and lived knowledge functioned as both a methodological strength and a source of emotional labor, illustrating how identity fundamentally informs the research process, especially in studies centered on marginalized voices. Rather than viewing this as a bias or constraint, we understand it as an essential feature of community-based research that strives to capture experiences of harm while also affirming the dignity and humanity of those who share their stories.

3.6 Data Analysis: Incorporating Intersectionality into Thematic Analysis

We employed reflexive thematic analysis [16] to inductively conceptualize themes and identify patterns within the data. The analysis process occurred concurrently with data collection, allowing us to iteratively refine the interview protocol, adjust codes, and explore emerging themes in response to the data. This dynamic approach enabled us to capture the complexities of the patterns of violence, transphobia, and safety concerns that TBIPOC individuals face, a context that shaped participants' narratives throughout the interviews.

Rather than limiting our analysis to what participants explicitly stated, we focused on understanding the broader context of their experiences. Intersectionality served as the central analytical framework, recognizing that the experiences of TBIPOC individuals are shaped by the interlocking systems of power and oppression related to race, gender, and socioeconomic status [65]. To ensure intersectionality was thoroughly embedded in the analysis, we took several vital steps.

In the initial coding phase, the first author focused on how participants' experiences of violence and safety were influenced by the intersection of their identities, including race and gender. For example, when a participant described harassment on public transportation, we coded it not only as "transphobia" but also considered how race and gender expression shaped their vulnerability, illustrating how intersecting oppressions compounded their experiences. During the second coding round, we refined the codes to explore power dynamics, specifically examining how systemic oppressions like racism and transphobia shaped participants' experiences. The first, second, and fourth authors then organized the codes into themes that reflected these intersecting oppressions. Preliminary themes, such as "racism," "trans-self-defense," and "location-sharing," were constructed as organizing categories derived from the coded data. Finally, the first author critically reviewed and refined the themes to ensure they accurately represented participants' intersectional experiences of violence and safety.

4 Results

Participants described the daily realities of systemic violence, exclusion, and resource scarcity, but also emphasized creative, and community-driven strategies that affirm safety and promote joy. From TBIPOC-led protection efforts to trans-affirming, culturally grounded technologies, they envisioned forms of care that institutions continue to neglect. These efforts not only provide protection but also cultivate trust and empowerment. The Results section reflects these interconnected experiences, beginning with how participants define community, safety, and joy, then examining the systemic challenges they face, the mutual aid practices that sustain their well-being, and finally, how technology and other interventions can support safety and joy experienced together, rather than separately.

4.1 Defining Community, Safety, and Joy

We begin by showing how participants described and defined the concepts most salient in this work: community, safety, and joy. For TBIPOC individuals, community is a source of both safety and joy, built through everyday acts of care, creative mutual aid, and the reimagining of digital and physical spaces. Participants emphasized that community is more than shared identity: it is an intentional practice of looking after each other through emotional, social, and material support, through both technological and physical mechanisms. As Luna shared, community meant *"holding space where people are seen, heard, and supported."* Erik similarly connected the community to interdependence, saying that it is *"depending on each other and helping within our capacity."* Interdependence, in the context of care and community, emphasizes a collective approach to care that extends beyond self-sufficiency and total dependence [13], highlighting how participants rely on one another and the systems that they build together to survive and maintain both safety and joy.

For the TBIPOC participants we spoke with, safety and joy were inseparable, two sides of the same coin. That is, they described finding joy in feeling safe, and joy could be a signal that they were safe – and both were rooted in community. These definitions align with prior work that conceptualized safety as something actively rooted in care and maintained through relationships with others [12, 60, 69]. Joy came from the ability to exist without fear, but also was intricately tied to freedom, authenticity, celebrating identities, reclaiming power in affirming spaces, and building relationships rooted in care. As Cass explained, *"you need support and people that you can be in space with, like sharing joy... communities [are] an intentional choice of people that you surround yourself with."* This framing of joy as an intentional, collective practice highlights how community enables participants to feel seen, safe, and supported. Many also saw joy as resilience, or finding beauty and comfort in shared experiences amid systemic adversity. Sophie connected joy in this sense to digital gaming spaces, saying, *"I mean [I game] for joy and play, but also to connect to other queer and trans people. But safety-wise, I do feel unsafe in larger gaming spaces."* While gaming can offer moments of joy, creativity, and connection, Sophie's reflection also highlights how these environments can often feel unsafe due to harassment, misgender, and exclusion. Her comment illustrates how joy and play can coexist with vigilance in unsafe environments. For participants, joy and safety were intertwined, shaping both their collective practices of care and the everyday strategies they used to navigate risk.

4.2 Navigating Risks and Threats Amid Systemic Challenges

Before describing the community practices and digital tools that help TBIPOC individuals cultivate safety and joy, we first outline the systemic challenges and forms of oppression that shape their everyday realities. Participants identified risks, threats, and systemic barriers affecting nearly every aspect of life, including frequent threats of physical violence, criminalization, and limited access to housing and healthcare. As Kris noted:

> *I think one of the biggest things, though, even before housing, is that Black and indigenous people of color who are trans-identified or non-binary identified are at a higher risk of being at risk, and people are always like, "What does at risk mean?" They are at risk of drug*

> *abuse, drug dependency, drug overdose, early death, sexual assault, physical assault.*

These challenges, compounded by racism, transphobia, and misogyny, make survival a constant struggle. Participants also described the emotional toll of being ignored by systems meant to protect them, such as law enforcement and healthcare. As Ironheart shared, *"you're at the mercy of the tolerance of the officer that you are in front of at the time... They might respect your identity; they might not."*

The systemic challenges participants discussed are summarized in Table 2 below. They reflect the structural barriers that continue to define TBIPOC realities. Acknowledging these challenges is essential not only for understanding the depth of marginalization TBIPOC face, but also for ensuring that efforts to support or design for this community are rooted in care, equity, and accountability. While some challenges mirror those faced by trans populations more broadly [51], our findings highlight risks specific to TBIPOC, who remain disproportionately targeted by violence and discrimination [25, 58].

To navigate persistent threats, participants employed various safety strategies: avoiding isolation in public, adopting behaviors to blend in, carrying self-defense tools, staying home when possible, and seeking out inclusive BIPOC and LGBTQIA2S+ spaces. Magic emphasized vigilance and mutual care, saying, *"In physical spaces, I just try to be very aware of my surroundings, stay close to friends, and always consider making space for myself and my friends to leave."* For Magic, this also included carrying items like a baton, taser, pepper spray, and knife. Others relied on their bodies as defense; as Kris put it, *"The Lord blessed me with two thumbs, a pair of strong legs, some very strong, biteable teeth, and the ability to swing."* These reflections show how participants confronted hostile environments through both tangible tools and embodied resilience, reclaiming agency and protection in daily life. In the sections that follow, we describe how TBIPOC participants cultivated community care and leveraged community and mutual aid to further navigate the risks and threats they faced.

4.3 Community as More than Shared Identity: Practicing Care, Belonging, and Mutual Aid

In this section, we describe how TBIPOC participants practiced care and mutual aid in community, employing practices of trust and belonging to support each other both through digital tools and in person. Care practices included everyday relational care as well as crowdfunding and collective financial support. Further, participants described the need for community-centered digital platforms to better support community care practices.

4.3.1 Everyday Relational Care, Connection, and Mutual Aid. Participants emphasized that technology can support community when grounded in TBIPOC values of care, trust, and inclusivity. For example, Miles advocated for community-building that is accessible and affirming, saying,

> *I think having events, bringing folks together, is one good way of trying to make this community [a safe space]...and recently hearing someone made a Facebook group... And they would be in there posting events, posting meetups that they want to do with people, and basically engaging with folks, especially because there's a queer coffee shop in town, queer-owned, and it's a nice vibe in there, and a lot of people utilize that space. So they have a queer writing club in there, and then they also have queer board games. So people can meet and congregate in spaces that aren't alcohol focused.*

Miles' discussion of Facebook groups and in-person events illustrates how digital platforms can complement in-person networks while fostering safety and belonging. Coffee shops and online forums are just a couple of the types of accessible, affirming environments where diverse members of TBIPOC communities can gather together. Miles further defines community as *"communal care for one another,"* exemplified through everyday acts such as offering his couch to friends in need or hosting potlucks and shared meals.

True community within TBIPOC spaces requires more than shared identity; it demands intentional inclusivity that honors individual differences and fosters genuine connection. Jubilee highlighted this diversity within the queer community, stating,

> *...finding more community, finding a better sense of belonging, and finding people who actually have a general connection with whatever your other interests are is also there. Because even inside of a community, it is not a monolith. Every person is going to be different...*

Jubilee's insight challenges assumptions that shared identity alone guarantees connection, pointing to the rich diversity within TBIPOC communities. They remind us that true belonging comes not just from shared labels but also spaces that honor individual interests, experiences, and ways of relating. This call for nuance emphasizes the need for intentionally inclusive environments that go beyond identity categories.

Both Jubilee and Miles' comments highlight how queer and TBIPOC communities often build safety and belonging not through institutions, but through direct, personal acts of support. These reflections expand the meaning of community beyond shared identity or physical space, emphasizing relational care, trust, and responsiveness. Such non-technological, grassroots strategies also serve as powerful models for designing tech-based tools. By grounding digital platforms in the values of mutual aid and emotional safety, we can create hybrid interventions that extend the reach of community care while preserving its heart. This integration points to a future where technology does not replace human connection, but deepens and sustains it. The everyday practices of care and connection described in this section form the relational foundation for TBIPOC safety and belonging.

4.3.2 Crowdfunding: "Passing the same $40 around." The participants emphasized how financial mutual aid functions as a core community-based survival strategy. Financial strain is a central concern in the trans community, especially for TBIPOC individuals facing systemic barriers to safety, housing, and healthcare. Erik's phrase, *"Passing the same $40,"* captures the limited resources circulating within the community and the vital role of mutual aid for survival. Jubilee elaborated: *"I'm not sure if it's trans care or poor people care, but basically it's just sharing resources in our circle,"* emphasizing how financial instability limits access to empowering activities like community events and self-defense courses. Their

Table 2: Challenges faced by trans and BIPOC individuals and their definitions

Challenges	Definitions
Fear of violent death	High rates of violence and murder, particularly targeting Black and Latina trans women.
Criminalization	Over-policing, racial profiling, and incarceration disproportionately affect trans and BIPOC individuals.
Limited employment	Lack of stable job opportunities leads to economic instability and, for some, sex work.
Housing discrimination	Prejudice based on race and gender limits access to stable housing.
Systemic financial barriers	Economic inequities prevent access to resources like housing, healthcare, and security.
Marginalization in critical systems	Exclusion from healthcare, law enforcement, and policy-making spaces.
Racism	Systemic and interpersonal discrimination affects employment, housing, and public safety.
Physical violence	Persistent threats and incidents of harm in both public and private spaces.
Barriers to gender-affirming care	Discrimination and a lack of competent providers obstruct access to healthcare.
Every day, transphobia and racism	Bias and ignorance create unsafe and hostile interactions in daily life.

reference to 'trans care' underscores the need for holistic support that helps TBIPOC individuals survive and thrive [72], addressing intersecting oppressions of gender, race, and sexuality. As Jubilee pointed out, care, whether framed as trans care or community support, relies on solidarity and shared resources, highlighting the essential role of networks in navigating systemic challenges.

Mutual aid is a vital mechanism for filling the gaps left by formal assistance systems. Mahari emphasized its importance, stating, *"Yeah, I mean, definitely that mutual aid [is a priority]."* This simple statement reflects how mutual aid is a crucial lifeline for TBIPOC individuals facing systemic neglect. Allies can contribute directly, as Kris suggested: *"If you got a trans friend, send them [money over] a Cash App...Let them go do their own self-care."* This approach empowers recipients to meet their needs autonomously. Sophie framed mutual aid as a flexible system that balances individual and collective capacity, saying, *"It would be great for communities like this to prioritize care, making sure everyone can do what is within their capacity."* Jae described mutual aid as a *"circular economy"* or *"care loop,"* where resources are shared and returned within the community, ensuring no one is left behind. *"Just if somebody doesn't have something, borrow it from each other and give it back. . . "* Jae said, *"part of that care loop is knowing that if I don't have funds, I can still access something and my friends can too."* Mutual aid thus encompasses survival, emotional care, resource sharing, and interdependence, fostering trust and long-term resilience.

Building on this vision of mutual aid as practical and relational care, participants emphasized addressing vulnerabilities specific to trans women of color. Monica discussed the need for flexible emergency funds to meet urgent needs such as homelessness, healthcare, or legal support: *"Having dedicated funds set aside for emergencies is incredibly helpful. When you give people money, they usually spend it on what they need most, in ways that directly improve their lives and situations."* Her perspective showcases the importance of adaptable, community-controlled resources. Programs like Detroit's Trans Sistas of Color Project exemplify how grassroots mutual aid can combine direct services, such as self-defense courses and GED programs, with community organizing and long-term empowerment [1]. Centering care on lived experience and local leadership transforms mutual aid further into a tool for both survival and liberation.

Participants also proposed digital tools to support mutual aid, such as a community-specific crowdfunding app. Erik envisioned an app where users could *"contribute funds to help each other, kind of like how we joke about passing the same forty dollars around. . . donate a certain amount, as a one-time or recurring contribution, and those funds could be accessed as emergency support."* This idea formalizes existing mutual aid practices, offering a centralized way to redistribute resources while reinforcing solidarity. However, even well-designed tools face challenges, such as ensuring fair distribution, preventing misuse, and maintaining long-term sustainability. Existing models like Trans Lifeline and Stealth Bros demonstrate the impact of informal networks but also their fragility, as they act as band-aids to larger structural issues.

4.3.3 Community-Driven Platforms for Safety and Belonging. In addition to everyday community care practices and financial support mechanisms, participants envisioned myriad ways that digital technologies could extend community support to enhance safety and belonging. These ideas ranged from crowdsourced review systems to trans-specific social networks. For TBIPOC individuals navigating public spaces with uncertainty, access to accurate, community-informed information can be life-changing. Digital tools centered on lived experiences and identity-specific safety concerns could fill critical gaps left by mainstream platforms. For instance, crowdsourced reviews focused on TBIPOC safety and inclusivity would provide crucial information about local businesses and services.

As Cass emphasized, there is a need for an *"accessible and reliable"* review platform *"just for trans BIPOC folks,"* offering information on

respect for pronouns, gender-neutral bathrooms, and potential patterns of racial profiling or misgendering. Existing apps like Google Maps label businesses as "LGBTQ-friendly," but often lack specificity like this for TBIPOC-related concerns. A platform tailored for TBIPOC could enhance both physical safety and confidence in navigating everyday spaces, offering insights into inclusivity and affirming practices. As Kris noted, such information is not easily visible: *"You don't see that [information on trans-friendly spaces/places] easily. You got to look a little further into the listing to find that information."*

Participants also highlighted the need for platforms designed specifically for trans individuals. Vixen envisioned a community-centered space, like a *"Facebook or Instagram solely for queer, trans people... where we can all share"* events, warnings about unsafe spaces, and recommendations for various environments, like saying, *"Okay, this club, don't go here... Be careful here."* Such platforms could harness collective knowledge to navigate risks, foster mutual care, and support both personal and collective resilience within queer and TBIPOC communities. However, existing platforms with queer or trans foci sometimes abandon their community-driven purposes. Ironheart criticized the app, Taimi, for shifting from a multifaceted social app to a swipe-based dating platform: *"It used to be a social app like Facebook, and you could post a story... You could comment on other people's statuses. You could make groups... then one day I got on, and they just reduced it to a swipe app."*

Taimi's shift illustrates the limitations of one-dimensional platforms for TBIPOC. Originally designed as a social app, Taimi supported storytelling, discussion, and group connections, fostering deeper engagement than a dating-only format. While dating can be one aspect of life, participants' experiences of exclusion and marginalization make broader community support more pressing. Combining review-driven features with community-centered social design could help TBIPOC provide vital safety information to one another to help users make informed decisions about the spaces they occupy. Centering TBIPOC voices in these platforms would foster solidarity, create inclusive environments, and build stronger, safer communities grounded in connection and mutual care.

Together, the practices we describe in the sections above illustrate how TBIPOC participants operationalize care, solidarity, and mutual aid to help address needs that institutions routinely fail to address. Beyond the mechanisms for community support described above, the next section explores how participants experience and cultivate safety and joy together, highlighting everyday strategies and community practices that sustain both.

4.4 Cultivating Safety and Joy in Tandem Through Community Care

Building on the forms of mutual aid and community care described above, participants also identified specific resources and tools that could help them experience safety and joy together. As described in Section 4.1, safety and joy were often inseparable for participants. Thus, participants spoke of ways to experience safety and joy together, rather than attempting to separate them. Supporting joy and safety in tandem called for tools, spaces, and practices rooted in collective care and empowerment. The sections that follow explore some of these community-centered strategies for promoting safety and joy, including non-digital resources like self-defense training and digital support systems designed specifically with TBIPOC individuals in mind.

4.4.1 Resources for Survival and Empowerment. Not all of the participants' ideas involved digital technology. Some mentioned self-defense training as vital for survival and empowerment. As Miles explained: *"I think of self-defense classes, of things of that nature, as teaching us how if violence do come up, how do we protect ourselves?"* Their framing emphasizes self-defense as a practical necessity, a proactive response to the reality of violence that helps build personal agency. For marginalized communities, especially TBIPOC individuals who disproportionately face threats, this training is not optional, but essential.

Participants also stressed the importance of trans-specific spaces for these courses, where they could feel secure and supported without fear of hostility. Mahari noted: *"It would be great to see more trans-specific self-defense classes. I wouldn't want to join any self-defense class that could potentially have other people... who are not queer or trans-affirming or friendly."* Her perspective highlights how safety extends beyond physical protection to include emotional and psychological security. Mahari's reluctance to join general self-defense classes stems from a history of exclusion or hostility in mixed spaces, making TBIPOC-specific offerings a necessity rather than a preference. These dedicated spaces not only teach protective skills, but also foster empowerment through community and shared experience.

Another challenge is the lack of visibility and promotion for TBIPOC-specific resources. Ororo reflected on this, saying, *"I get emails for trans nonbinary self-defense classes, but not enough people show up. I don't see these classes advertised as much as parties."* Their comments point to an imbalance in community priorities, where safety resources receive less attention than social events, which can leave many TBIPOC unprepared when they encounter safety threats. Ororo also gestures to systemic fatigue, stating, *"Maybe people have been beaten down by the system and don't feel empowered with tools like self-defense techniques or legal knowledge. I don't want to say people don't care [about trans-self-defense courses], but I do."* After enduring constant marginalization, some may feel disempowered or skeptical about the usefulness of such tools. However, their concern is not about apathy, but about access and emphasis.

Beyond physical preparedness, participants framed these resources as shaping how safety was felt and lived. For participants, safety and joy were experienced in tandem rather than as separate outcomes. Self-defense training and spaces created specifically for TBIPOC not only lowered the risk of harm but also helped reduce hypervigilance, making it easier for people to feel at ease, confident, and connected. Participants described joy as something that could only emerge once a baseline sense of safety was established, when the constant work of scanning for threats eased enough to allow presence, embodiment, and mutual recognition. In this way, joy functioned as both an outcome and a signal of safety, rooted in community-based practices that stabilized individuals emotionally and physically.

By elevating the visibility of TBIPOC-specific survival resources, we can shift the narrative of survival alone to one of agency, protection, and collective resilience. With greater investment and outreach, these programs can transform not only physical preparedness, but also participants' sense of agency and resilience within supportive networks. The resources we described in this section would enhance individual safety while strengthening mechanisms for community support within TBIPOC communities.

4.4.2 Buddy Systems as Community Safety Infrastructure. While many participants described safety and joy as rooted in community and belonging, they also stressed the need for concrete strategies to navigate everyday risks in public and semi-public spaces. Safety was not just an abstract feeling, but something actively built through intentional practices and support systems. One such strategy was a buddy system, grounded in mutual care and collective responsibility, where people could rely on trusted companions for presence, accountability, and emotional support. Participants described these systems as enabling both safety and joy by reducing isolation and, with it, the constant vigilance required to move through the world alone. Erik envisioned a buddy system as a community-driven safety tool that balances personal autonomy with the complexities of trust in public and semi-public settings:

> *A buddy system would be great, even if the app was just called 'The Buddy App.' It could help you find someone to walk with you to a destination near your apartment because, at the end of the day, you don't always know the people around you, and you don't necessarily want strangers in your personal space. I think that's definitely something we should develop for our community.*

The idea resonated with other participants, including Emerson, who expanded on its practicality, saying, *"You never know where violence might happen...So, having something like a buddy system app would be helpful. It could be organized by state, allowing people to meet up, offer support, and trade resources in their area."*

A buddy system may offer participants companionship in unsafe situations without requiring reliance on unfamiliar individuals. Integrating technology with interpersonal support can foster solidarity while enabling users to establish personal boundaries for interaction. Emerson's state-based model further emphasized the importance of localized, community-driven solutions that empower individuals and reinforce collective responsibility. By reducing the emotional and cognitive demands of independently managing risk, such systems may allow participants to experience increased ease, presence, and connection, which they identified as essential for a sense of safety.

Others, like Jubilee, highlighted how connection itself functioned as a form of care and joy rather than merely a response to danger: *"Even having a forum open for people to connect, that is in and of itself a form of self-care... that special interest could be anywhere from... Pilates to a book club, to a knitting group, and a crochet group."* In this way, connection itself became a site of joy, not just safety. Shared interests and low-stakes social spaces offered moments of pleasure, creativity, and mutual recognition, allowing participants to experience care and belonging beyond crisis response and threat avoidance. Rather than positioning joy as separate from safety, participants described it as emerging through collective practices that made safety feel possible and sustained. The buddy system could address immediate safety concerns while also creating these opportunities for belonging, joy, and solidarity.

By integrating practical protection with emotional support, participants characterized buddy systems as a form of community safety infrastructure. This infrastructure strengthens resilience, redistributes safety responsibilities, and fosters solidarity within marginalized communities.

4.4.3 Conceptualizing Trans-Specific Safety Apps for Collective Care. Many TBIPOC individuals use mainstream safety apps like Life360 to share their location and send emergency alerts. While helpful in crises, these tools only partially address the risks TBIPOC face, such as misgendering, transphobic violence, and racial profiling. These threats are systemic, shaping daily navigation of both public and digital spaces and highlighting the need for safety technologies built around TBIPOC experiences. Participants emphasized that safety technologies must do more than respond to crisis; they must reduce the constant anticipatory fear that limits one's ability to feel at ease or experience joy. Luna shared how Life360 was helpful when a friend was being stalked, saying, *"She sent out an alert through Life360, and since I was the closest, I drove to her location and helped diffuse the situation."* Such tools can quickly mobilize community support, like with Luna and her friend, but they remain reactive and overlook broader needs, such as access to gender-affirming care, safe restrooms, or inclusive shelters. These resources are essential to both the physical and emotional well-being of TBIPOC individuals.

Participants also cautioned that features like police alerts, common in mainstream apps, can escalate danger for TBIPOC individuals. Wave expanded on this, saying, *"I don't think police serve people well in general, but I think for TBIPOC, the intersection of racism and transphobia means police just should be avoided for better options like relying on community/trusted connections."* This reflects a disconnect between mainstream conceptions of safety and TBIPOC realities, where police involvement often brings escalation, criminalization, or trauma [87]. For participants, the possibility of police involvement was itself a source of stress that undermined feelings of safety, making it difficult to experience trust, ease, or joy even when using safety tools. Monica pointed to alternative infrastructure for trans-specific safety apps, stating, *"An app that doesn't include police would have to include another organization or person... providing that infrastructure"*. While developing this infrastructure, particularly in under-resourced areas, is a challenge, participants stressed its necessity for any trans-specific safety apps.

Privacy was another critical concern. Mainstream apps can often expose sensitive information, such as location, identity, or gender history, without consent, creating risks for trans users who are not publicly out. A trans-specific safety app would need to prioritize privacy, offering fine-grained controls over visibility, data sharing, and anonymity. Such protections were described as foundational to feeling secure enough to engage freely with others and participate in community life.

Beyond immediate safety, participants envisioned technology as a tool for collective survival. Erik explained this vision, saying, *"We should definitely utilize cell phones and develop an app that can help us identify when one of us is in a situation where we need assistance...*

community resources, financial resources, physical labor resources, and things like that." This holistic vision frames safety as access not just to protection, but to networks of care, aid, and dignity. By connecting users to affirming resources and trusted networks, trans-specific safety apps could reduce isolation and precarity, creating the conditions for joy rooted in collective care rather than individual resilience alone. For example, participants envisioned such apps as providing access to affirming healthcare, legal support, housing, and peer-led mutual aid, strengthening both individual agency and collective resilience. Participants' visions for trans-specific safety apps underscore a broader theme across our results: for TBIPOC individuals, safety and joy are inseparable, and both depend on infrastructures that affirm identity, protect autonomy, and sustain community-based care. Safety technologies for TBIPOC must therefore be rooted in lived realities while extending existing practices of community care and relational trust.

5 Discussion

We centered TBIPOC individuals to understand how they wish to integrate safety and joy into technological interventions. Participants emphasized that safety is inseparable from joy; safety is not only the absence of harm, but also the presence of trust, connection, and well-being. Survival resources such as self-defense training and trans-specific spaces were seen as vital responses to disproportionate violence, while community was the foundation of safety itself. Community meant having reciprocal networks and shared spaces where TBIPOC individuals could access emotional, social, and material care. Within these spaces, belonging and mutual aid allow joy to flourish as freedom, authenticity, and resistance, rooted in chosen family and living without fear. While attending to violence may appear "damage-centered" [106] to some, ignoring it would be more harmful. HCI must confront systemic barriers directly and design with liberatory goals in mind. Though technology cannot eliminate the root causes of oppression, it can help address these challenges by supporting the community-driven strategies TBIPOC individuals envision, advancing safety, joy, and collective resilience.

5.1 Rethinking Community Safety Practices as Mutual Aid: Relational Care and Cultural Knowledge

While mutual aid is often understood as material support, participants described it as a core safety practice rooted in relational, emotional, and cultural forms of care. As Spade [97] reminds us, mutual aid must resist institutional charity models that are conditional, surveilled, or hierarchical. While often framed as material exchange of money, food, and housing, participants described how safety-related actions like checking in on friends, holding space for grief, or offering emotional witnessing were central mutual aid practices. This expansive view of mutual aid centers presence, trust, and collective survival [7, 76, 84, 93]. As Malatino [72] and Hobart [54] argue, relational care and making space for grief, joy, or growth, is as vital as groceries or money. Our findings demonstrate how supportive safety practices are also vital forms of mutual aid.

Reframing mutual aid as including community safety practices challenges deficit-based logics that treat need as personal failure, instead positioning giving and receiving as acts of recognition and shared power. One way community members keep each other safe is by ensuring everyone has the financial resources they need to survive. Kris' description of CashApp donations as *"self-care"* illustrates how financial exchanges also affirm dignity and autonomy, rejecting narratives that label interdependence as weakness, recasting care as collective strength [56, 82]. In Cvetkovich's terms [24], collective emotional labor politicizes affective struggle, echoing Lorde's call to treat self-care as political warfare [67]. For TBIPOC individuals navigating transmisogynoir, anti-Blackness, and economic abandonment, the boundaries between care, resistance, and survival blur. Emotional labor, cultural memory, and shared language become survival infrastructure [10, 110]. Mutual aid passes down wisdom and survival strategies as intergenerational knowledge; it is not just a way to survive, but a way to live, care, and build a future together that is shaped by the values of TBIPOC communities. It holds people through hardship but also creates culture, connection, and possibility, especially in the face of systems that ignore or erase them [89].

Looking ahead, keeping community safety practices alive as forms of mutual aid will mean investing in relationships and networks of care. While technology can help expand access and visibility [23, 30, 79], its design should reflect the values participants named: trust, cultural relevance, and flexibility. What is needed is not faster or more streamlined systems, but tools that honor lived knowledge, respect boundaries, and make space for community care practices. This can look like designing safety and mutual aid platforms in collaboration with the communities who will use them, building in options for anonymity and consent at every step [5, 34, 68, 91, 92, 114], and creating features that support relationships and emotional connection, not just the exchange of resources. By centering community voices in the design process, the tools can grow from their values rather than imposing outside priorities. These practices show that mutual aid functions as everyday safety infrastructure, grounded in relations, emotions, and culture. Such practices set the stage for broader political and structural dimensions, which are discussed next.

5.2 Mutual Aid as Political Praxis and Structural Critique

Building on these relational practices, participants also described mutual aid as political praxis. Emerging in response to chronic institutional abandonment rather than abundance, mutual aid as political praxis reflects both resilience and strain. Erik's description of *"passing the same $40"* captures this dual reality: solidarity amid scarcity [63, 97]. These acts of care endure, but they arise from conditions that should not exist in the first place [8, 110]. Mutual aid from fellow community members was more empowering and agentic to participants than top-down charity, yet also precarious. Crowdfunding platforms, often the only lifeline, can mirror racialized and gendered inequalities in reach and visibility [26, 43, 71, 118]. Success depends on proximity to whiteness, digital literacy, and access to expansive networks [55, 62], leaving many to navigate cycles of scarcity and fatigue. Monica's call for emergency funds illustrates mutual aid as survival infrastructure, echoing abolitionist visions for autonomy and collective liberation [39] and

solidarity economy practices, where resources are shared outside exploitative systems [97].

We reframe mutual aid as both relational care and an ongoing political demand for structural redress. Participants described mutual aid not as a substitute for failed institutions, but as a refusal to wait for justice; an insistence on community control. Their interest in mutual aid technology, such as a community-designed crowdfunding platform, reveals a desire to formalize existing practices, but also has potential pitfalls. As Costanza-Chock [23] warns, without participatory and justice-oriented design, tech tools risk replicating the very exclusions they seek to solve. Erik's vision of a platform grounded in communal trust echoes design justice principles, but challenges of privacy, sustainability, and access remain. Extending prior work on digital mutual aid [7], we show how TBIPOC communities adapt tech for care while recognizing its limits. Participants were clear: technology can amplify mutual aid, but it cannot resolve the systemic neglect that necessitates it; at best, it functions as triage, not transformation: temporarily relieving harm, but not restructuring its causes [9, 117].

In sum, we reaffirm that mutual aid and technology design are powerful means to support marginalized communities, especially when combined, but communities cannot, and should not, bear the burden of systemic neglect alone. The burden of systemic neglect must be recognized, resourced, and supported as part of a broader justice ecosystem. The path forward lies in ensuring that technology and policy follow the lead of and learn from communities who have long treated care as resistance and survival as collective practice.

5.3 Design Implications for Safety and Mutual Aid Technologies

Designing safety and mutual aid technologies for and with TBIPOC communities requires more than equitable access or surface-level inclusion; it demands a radical reorientation of how we understand safety, care, and technological possibility. These tools must be grounded in the political, emotional, and cultural lives of the communities they intend to serve. Because safety is not merely the absence of harm but the presence of trust, joy, affirmation, and collective accountability, safety technologies must be community-specific and rooted in relational ethics. We provide design implications specifically for the TBIPOC community based on our findings.

5.3.1 Designing for Collective Safety and Community-Driven Technologies. Participants emphasized that safety technologies must begin with collective responsibility, not institutional intervention. Designing tools "for all" often ignores the intertwined racialized and gendered risks TBIPOC individuals face. Many technologies frame police alerts as default safety features, but these alerts often endanger TBIPOC, as long histories of police violence and distrust show [87]. Pendse et al's study of Indian mental health helplines shows a similar pattern: people change how they seek help because they fear police involvement [83]. Then, instead of one-size-fits all safety approaches, participants called for community-driven technologies that strengthen the care practices TBIPOC communities already use: checking-in on friends (with consent), strengthening relationships through shared activities, and pooling collective resources when crises arise. To meet these needs, we must design safety technologies using participatory and community-centered approaches, rather than extractive or surveillance-based models that treat "inclusion" as a simple checkbox.

Designing for collective safety, then, means centering user agency, cultural specificity, and consent-driven data practices. Also, it means building tools that confront or work around systemic barriers rather than assuming stable identities or equal access. By foregrounding decentralized, peer-based care and the relational practices that sustain TBIPOC communities, safety technologies can shift away from institutional logics of punishment or monitoring and toward solidarity, autonomy, and community self-determination.

5.3.2 Designing for Trust, Agency, and Participation. Trust, agency, and participation were also essential to participants' ideas of designing better safety technologies for TBIPOC individuals. They stressed that trust must be continually renewed through features such as transparency and consistent responsiveness. When tools make mistakes, or worse, silence users, communities need meaningful avenues and the agency to challenge decisions, correct errors, and restore confidence. In this context, agency means controlling visibility, data, and modes of engagement, rather than letting systems force users into rigid identity disclosures or fixed participation roles. Agency depends on and grows with ongoing participation, with users shaping tools as they use them.

Participation, in this sense, is not just formal governance but the everyday work of co-creation: testing features, giving feedback, and adapting tools to match shifting community needs. This relational participation must be met by reciprocal design. Technologies should give back by reducing emotional burdens, easing coordinating, and redistributing resources, rather than extracting data or producing new forms of labor. As Baca-Vázquez [7] notes, solidarity-oriented platforms endure not because they are perfect at launch, but because they remain culturally responsive, accountable, and relationally maintained over time.

5.3.3 Designing for Care and Flexibility. Lastly, care and flexibility must also guide the design of safety technologies for TBIPOC individuals. TBIPOC individuals experience technological fatigue because exclusionary systems demand ongoing, invisible labor: learning unfamiliar tools, troubleshooting devices, and maintaining shared tools [7]. Ignoring these burdens means disproportionately placing them on a few "tech-literate" members, increasing burnout and inequity. Our findings extend existing scholarship by showing how TBIPOC communities resist these harms through collective stewardship, sharing technical responsibilities so no one person carries the full weight of keeping community-driven systems running.

Participants did not reject technology; instead, they rejected tools that offload labor onto individuals, as opposed to communities. They envisioned technologies that amplify community labor instead of replacing it, such as platforms that help people pool emergency funds, signal when someone needs support, or share culturally grounded wellness practices. Well-designed safety technologies should let users shift between roles, whether that be seeking urgent help, offering support, or resting in an affirming space. Additionally, these shifts should be possible without forcing users to navigate punitive or inflexible systems.

To meet TBIPOC communities' needs, design must move away from assuming universality and instead support customizable and

context-sensitive features. Flexible privacy settings should let users share different information across contexts, and systems must also support chosen names, pronouns, and avatars without legal verification. Safety technologies with social connection features should rely on mutual consent, and emotional safety must serve as a core design value, preventing misgendering, unwanted contact, and exposure to transphobic content. Designing for care and flexibility in this way will help move towards technological spaces that support safety with community.

6 Conclusion

This study examines the daily safety challenges faced by TBIPOC individuals and highlights the urgent need for interventions developed in collaboration with these communities. Participants shared not only the realities of navigating violence, discrimination, and systemic harm, but also the creative and powerful strategies they use to care for one another, both through technology and community-based practices. While no app or platform can solve the deep-rooted problems of transphobia, racism, and systemic neglect, technology can still play a meaningful role. When grounded in care, co-designed with community members, and integrated with existing networks of mutual aid and support, tech tools can help build safer, more affirming environments.

To move beyond survival, these community-based efforts must be supported by structural and policy investments. Public infrastructure must be reimagined to reflect the flexibility, dignity, and cultural specificity of grassroots models, with policy responses co-designed alongside TBIPOC communities and informed by their lived realities. Such efforts must address root causes like housing insecurity, criminalization, employment discrimination, and healthcare inaccessibility. This research contributes to a growing movement that centers TBIPOC leadership and lived experience in the design of safety interventions, pointing to the need for holistic approaches that connect technology, community knowledge, and policy change. By listening to and building alongside TBIPOC individuals, we can support not just survival, but the creation of spaces where people can truly thrive.

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