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Scoping review on technology-facilitated gender-based violence against women with disabilities and LGBTQI+ persons in low- and middle-income countries

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Background: Technology-facilitated gender-based violence (TFGBV) refers to acts of harm enabled or intensified through digital platforms, negatively affecting women's rights, safety and well-being. Women with disabilities are at heightened risk because of the intersection of ableism and gender inequality. However, limited evidence exists on how TFGBV manifests and impacts this population, particularly in low- and middle-income countries (LMICs).

Objectives: This scoping review aimed to map existing research on TFGBV against women with disabilities in LMICs, identify common patterns and explore intersections with broader structural vulnerabilities.

Method: Using the PRISMA-ScR framework, we searched seven academic databases and grey literature published between 2010 and 2024. Eligible studies focused on women in LMICs and involved TFGBV through consumer digital technologies. Data were charted and deductively analysed using adapted frameworks from prior TFGBV literature.

Results: From 4738 records screened, 43 studies met the inclusion criteria. Most explored how digital tools enabled violence with offline consequences. None focused exclusively on women with disabilities, though some included them. Technology-facilitated gender-based violence impacts were wide-ranging, with LGBTQ+ individuals, rural populations and low-income groups facing intersecting risks.

Conclusion: This review highlights a gap in research on TFGBV among women with disabilities in LMICs. Future studies must centre intersectional, inclusive and survivor-informed approaches.

Contribution: This review adopted an intersectional approach, recognising how disability, gender, poverty and other marginalised identities compound TFGBV risks. It highlights the lack of focused research on TFGBV against women with disabilities in LMICs and the need for inclusive, survivor-informed research and policy responses.

Keywords: gender-based violence; technology; women with disabilities; low- and middle-income countries; intersectionality.

Introduction

Digital inclusion presents a powerful avenue for people with disabilities to assert agency and amplify their often-silenced voices. However, it also carries the risk of reinforcing and perpetuating existing forms of ableist discrimination (UN Women & WHO 2023). Technology-facilitated gender-based violence (TFGBV), as defined by UN Women and WHO (2023), is any behaviour facilitated, exacerbated or perpetrated through information and communication technologies (ICTs) or other digital means, which results in, or has the potential to result in, physical, sexual, psychological, social, political or economic harm or constitutes a violation of individual rights and freedoms. It includes a range of behaviours perpetrated through mobile devices, social media platforms, interactive computer games, text messaging, email or any other related technologies. Common tactics used by perpetrators include cyber-bullying, cyber-grooming, hacking, doxing, image-based abuse, impersonation, threats and unwanted messaging and posting (Hameed et al. 2025; Hinson et al. 2019; UNFPA 2022). Manifestations of TFGBV may include combinations of tactics perpetrated online or continued offline (Hinson et al. 2018; Posetti et al. 2021).

Note: Additional supporting information may be found in the online version of this article as Online Appendix 1 and Online Appendix 2.

Online violence against women is widespread and escalating globally, with particularly high rates in specific regions and among younger age groups. It was reported in 2021 that 85% of women have experienced some form of online violence (The Economist Intelligence Unit 2021). Earlier findings by the UN Broadband Commission indicated that nearly 73% of women had encountered online violence, with young women aged 18–24 being especially at risk of severe online abuse (UN Women 2015). Technology-facilitated gender-based violence, much like other manifestations of gender-based violence (GBV), stems from entrenched patriarchal norms and structural inequalities. These forms of violence are often compounded by intersecting systems of oppression, including racism, ableism, homophobia, transphobia and other forms of discrimination that marginalise certain groups (Barter & Koulu 2021; Dunn 2020; Henry, Flynn & Powell 2020; UN Women & WHO 2023). As a result, people who hold multiple marginalised identities such as women and girls, people with disabilities, LGBTQ+ individuals, face heightened risks of experiencing digital and technology-mediated forms of violence (Afrouz 2021; Bansal et al. 2023; Dunn 2020; Henry et al. 2020; Lenhart et al. 2016; Plan International 2020; UN Women 2022; WHO 2020).

People with disabilities face heightened risks of violence because of their increased vulnerability (Astbury & Walji 2014; Coker, Smith & Fadden 2005; Mikton & Shakespeare 2014). This vulnerability is further compounded by gender, with substantial – though insufficiently addressed evidence indicating that women with disabilities are disproportionately affected by interpersonal violence, including sexual assault and intimate partner violence (Coker et al. 2005; Hollomotz 2009; Waxman 1991). While emerging research indicates that individuals with intersecting marginalised identities are particularly susceptible to online forms of violence (Afrouz 2021; Bansal et al. 2023; Dunn 2020; Hameed et al. 2025; Lenhart et al. 2016; UN Women 2022), the intersection of gender, disability and technology-facilitated violence remains underexplored. Addressing this gap is critical, especially given the significant role technology plays in the lives of people with disabilities in accessing information, engaging in advocacy and fostering community (Gelfgren, Ineland & Cocq 2022).

In low- and middle-income countries (LMICs), TFGBV presents unique and often under-recognised challenges, particularly for women and girls with disabilities (Bansal et al. 2023). While digital access is increasing in LMICs, so too are the risks of online abuse, especially in contexts where legal protections, digital literacy and gender equality are limited. Structural inequalities such as poverty, lack of accessible education and weak enforcement of cybercrime and GBV laws exacerbate the vulnerability of women with disabilities to tech-enabled forms of violence (Bansal et al. 2023; Sheikh & Rogers 2023). These challenges are intensified by social stigma, ableism and limited institutional support, which collectively silence survivors and hinder their access to justice and protection (Sheikh & Rogers 2023). As of the time the scoping was conducted, no published studies were identified that specifically addressed TFGBV against women with disabilities in LMICs. This absence of prior research highlights the significance of the present study in addressing this critical evidence gap. This scoping review aimed to map and synthesise the available evidence on technology-facilitated violence against women with disabilities in LMICs. We addressed the broad research question: *What is the scope of the evidence on technology-facilitated violence against women with disabilities in LMICs (i.e. what type of literature exists, what methodology was used, where is this work published, what are its key findings, including what are the core vulnerabilities for this group)?*

We answer this question in a two-part series of articles. In this article (Part One), we address our first sub-question: *(1) What are the manifestations of TFGBV and its intersections with gendered disability in the context of LMICs?*

Research methods and design

This scoping review sits within a wider mixed-methods study exploring how technologies (such as smartphones, tablets and everyday consumer digital products) variously promote, increase and enable violence against women with disabilities in South Africa and to identify strategies that they may use to protect themselves, remain safe and respond to violence (Hameed et al. 2025). This scoping review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for scoping reviews – PRISMA-ScR guidelines (Tricco et al. 2018). The PRISMA-ScR checklist has been added as Online Appendix 1. The protocol for this scoping review was registered on the Open Science Framework (https://doi.org/10.17605/OSF.IO/GZ2UR) and published on BMJ Open Journal (https://bmjopen.bmj.com/content/15/3/e093988.full?ijkey=SejIUUNMduXQzrz&keytype=ref).

Search strategy

A search for relevant papers was conducted with assistance from a subject librarian at the Stellenbosch University Faculty of Medicine and Health Sciences library. Seven databases (CINAHL, Scopus, Web of Science Social Sciences Citation Index, PubMed, PsycINFO, Cochrane and Proquest) were selected because they are comprehensive sources of peer-reviewed research in the relevant fields of interest and types of publications. For grey literature, we conducted searches on Google and specific websites of relevant organisations, such as UN Women, UNFPA, UNESCO, Plan International and Sightsavers. In instances where a report cites relevant information sources, they were screened for eligibility and included. Table 1 outlines the inclusion and exclusion criteria.

This scoping review focused on women with disabilities across all age groups and gender identities, including cisgender and transgender women, without imposing age restrictions to ensure the inclusion of younger participants active in digital spaces. It considered all types of disabilities and included only studies specifically focused on women; studies with mixed-gender samples, key informant data only

TABLE 1: Eligibility criteria.

Inclusion criteria	Exclusion criteria
Women with disabilities	Studies with samples that were mixed gender (e.g. men and women)
Cisgender and transgender women	Studies capturing the views of key informants (e.g. service providers)
All types of disabilities and impairments	Studies excluding female participants
Studies about technology-facilitated violence against women with disabilities	Evidence related to disability or gender-based violence that does not involve any use of technology
Studies from LMICs	Studies from high-income countries

LMICs, low- and middle-income countries; GBV, gender-based violence.

or without women-identifying participants were excluded. The review examined how widely used consumer technologies enable or exacerbate TFGBV against women with disabilities, excluding studies lacking a technological component. Geographically, the review was limited to LMICs, excluding data from high-income settings. It included diverse sources, such as primary studies, reviews, editorials and externally examined PhD theses. Only research-based grey literature published in English between 2010 and 2024 was considered. Non-research grey literature, opinion pieces, blogs and media content were excluded. A literature search covering the period from 2010 to 2024 was conducted to capture developments over the past decade and a half, reflecting the rapid expansion of digital technologies and their growing relevance to experiences of TFGBV.

Screening and study selection

Following the completion of database and grey literature searches, all potentially relevant titles and abstracts were compiled into a Research Information Systems (RIS) database and imported into CADIMA (https://www.cadima.info/index.php), a free-to-use, web-based tool that facilitates scoping reviews, systematic reviews and evidence gap maps, for de-duplication. Two reviewers (Shaffa Hameed, Babalwa P. Tyabashe-Phume or Eunice Tunggal) independently screened titles, abstracts and full texts, with discrepancies flagged by CADIMA and resolved through discussion. The same reviewers later conducted full-text screenings and exclusion reasons were recorded and reflected in the PRISMA flow diagram. Final inclusion decisions were supported by additional authors. A finalised list of studies was exported from CADIMA for data extraction. Importantly, during the screening process, the review's parameters were revisited to ensure alignment with the broader study goal.

Diversions from the protocol

During the screening process, the review parameters were reassessed to maintain relevance, particularly in light of a notable evidence gap. The original research question focused on technology-facilitated violence against women with disabilities in LMICs, but no studies meeting the inclusion criteria were identified. To address this gap, the population scope was expanded to include both women with and without disabilities, though ultimately no studies focusing exclusively on women with disabilities were found. Additionally, the conceptual scope was broadened beyond the original focus on technology as a tool of violence to also capture how women, regardless of disability status, employ digital technologies to enhance safety, resist abuse and respond to acts of violence and exploitation.

While this flexibility is not common for scoping review methods, we deemed it necessary because the purpose of the scoping review was to inform our next methods and so if insufficient evidence was located with the previous questions and scope, then to make the review usable for helping with advocacy and with continued research, it needed to be revised. This does not make the work less rigorous but simply more applicable.

Scoping reviews use an iterative, flexible approach to map broad literature and include diverse perspectives across disciplines. Adaptive methods support discovery, enabling researchers to identify unexpected patterns and insights, especially valuable when a study may reveal more than originally anticipated (Gottlieb et al. 2021; Van Assche et al. 2021). Thus, we made the adaptations with the following in mind:

- Focusing only on literature including women with disabilities would be limiting, especially with regard to the mixed-gender approach.
- Low- and middle-income countries studies are still being explored and are still an important factor that impacts TFGBV.
- Women without disabilities still have a gendered experience of TFGBV, which is further exacerbated by disability.
- Iterative and flexible reviews are possible and necessary so that resources and funding are spent wisely and will produce results that can be disseminated and useful to the general population, not just the academic community.

The purpose of the scoping review was to inform our next methods, and so if insufficient evidence was located with the previous questions and scope, then to make the review usable for helping with advocacy and with continued research, it needed to be revised. This does not make the work less rigorous but simply more applicable.

Data extraction and analysis

Using Microsoft Excel, the data extraction sheet and variables were drafted and refined by Shaffa Hameed in an iterative process, with input from other authors. The sheet was first piloted by extracting data from seven studies and then finalised for wider use. Two reviewers independently extracted a subset to check for consistency and resolve any disagreements. The remaining records were divided between them. The final set of variables is listed in Table 2, following a description of our analytical approach.

Analytical approach

The data extraction sheet and associated variables were initially developed in Microsoft Excel by Shaffa Hameed through an iterative process, incorporating feedback from the broader author team. To test and refine the tool, data

TABLE 2: List of variables used to chart and map the evidence.

Variable	Categories
Details of the record	Title, author(s), publication year, journal name, publication type
About the study	Study setting, study aim, outcome or conclusion
Study design	- Qualitative, quantitative or mixed-methods - Descriptive or evaluative
Data collection	Sample recruitment method, data collection method, data analysis method and limitations of the study
Sample	Participants or study population (inclusion and exclusion criteria where specified), sample size, age range, gender identity (cis or trans), sexual identity (straight or LGBTQIA+ identities)
Disability	- Are the primary participants of study people with disabilities? - Impairment type - Means of assessing disability (clinical, self-reported, WG questions)
What was the mode of technology used?	Categories adapted from Hinson et al. (2018) - Social networking sites (Twitter, Instagram, etc.) - Dating sites or apps - Communication technology (SMS, email, WhatsApp, etc.) - Entertainment and news sites (YouTube, Reddit, blogs, etc., which allow commenting and interaction) - Other app or site
How was the technology used?	Our own categories - (a) Used to promote or increase or enable violence - (b) Used to remain safe or protect from or respond to violence
How was the technology used to remain safe/protect from/respond to violence (if answered B above)?	Categories adapted from Hinson et al. (2018) and literature review - For prevention (e.g. apps showing safe areas) - As a resource or guide (e.g. chatbot, app with information, decision aid) - As a safe space (e.g. protected virtual spaces for interaction) - As a link to social support (e.g. through online disclosure) - For reporting, link to formal services
How did the violence manifest?	Our own categories - Online only - Online to offline: includes instances where online violence moves offline as well as instances where online violence uses *the threat of* offline violence (e.g. blackmail). So, both actual and threatened offline violence - Online and offline: when both are experienced and the temporal order is not specified or not significant - Offline violence with online response (e.g. apps and resources designed to help survivors of offline violence to seek help)
What was the relationship between the survivor and perpetrator(s)	Categories adapted from Hinson et al. (2019) - Were the perpetrators known or unknown to survivors? - If known, who are they? - If known, did they become known pre- or post-exposure to violence? - Unclear or not specified
What was the incidence of the act?	Simplified from Hinson et al. (2019) - Single incident - Multiple incidents, same perpetrator - Multiple incidents, different perpetrators - Multiple incidents, different and multiple perpetrators targeting the same victim (e.g. online mob) - Unclear or not specified
Core vulnerabilities or risk factors: what made these survivors more vulnerable than the general female population?	Categories taken from literature review - Adolescent girls - Women who are or have been in abusive intimate relationships - Women with disabilities - Women with LGBTQIA+ identities - Other intersecting characteristics (e.g. racial, ethnic, religious minorities) - Women in political or public spheres - Other factors, if specified - No additional vulnerabilities separating them from the general female population - Unclear or not specified
What were the impacts on survivor(s)?	Categories taken from (Hinson et al. 2019) - Aspirational (e.g. affects educational activities or opportunities) - Economic (e.g. affects income-generating activities or opportunities) - Functional (e.g. changes to daily life or routine, taking down a social media profile) - Physical (e.g. assault, self-harm) - Psychological (e.g. shame, depression) - Social (e.g. exclusion or isolation from family or friends) - Unclear or not specified
What were the protective or coping behaviours related to tech post-exposure?	Our own categories - Report - Keep using with more caution or increased privacy settings or self-censorship - Avoidance or withdrawal from use - Unclear or not specified

Note: Please see the full reference list of the article, Tyabashe-Phume, B.P., Tunggal, E., Hameed, S., Hunt, X., Soldatić, K. & Ned, L., 2025, 'Scoping review on technology-facilitated gender-based violence against women with disabilities and LGBTQI+ persons in low- and middle-income countries', *African Journal of Disability* 14(0), a1810. https://doi.org/10.4102/ajod.v14i0.1810, for more information.
WG, Washington Group.

were first extracted from a sample of seven studies before finalising the sheet for full implementation. To ensure consistency, two reviewers independently extracted data from a subset of studies and resolved any discrepancies collaboratively. The remaining studies were then divided between the reviewers for individual extraction. The final set of variables used is outlined in Table 2, following a description of the analytical approach. As a framework for this deductive approach, we drew from two resources illustrated as Figure 1 and Figure 2.

Because of the lack of standardised definitions, categories and frameworks on TFGBV, we expanded upon existing frameworks and incorporated our own categories to align with the goals of our research (see Table 2 for the final list of variables).

Ethical considerations

Ethical clearance to conduct this study was obtained from the Health Research Ethics Committee of Stellenbosch University (No. N24/07/091).

Results

The overall scoping review search strategy identified over 4700 non-duplicate records. However, most of these did not satisfy the eligibility criteria and were therefore excluded. Of the 569 records reviewed at the full-text stage, 521 were deemed ineligible, and 43 records were included in the final

list. Of the 43 included records, 40 were individual studies, 2 were reviews and 1 was a review that included primary data. Figure 3 illustrates this process.

Description of included studies

Online Appendix 2 depicts the characteristics of the included studies, and some data extracted from the individual studies. The included studies were classified based on the role of technology – whether it was used to facilitate, escalate or enable violence against women, or alternatively, to stay safe,
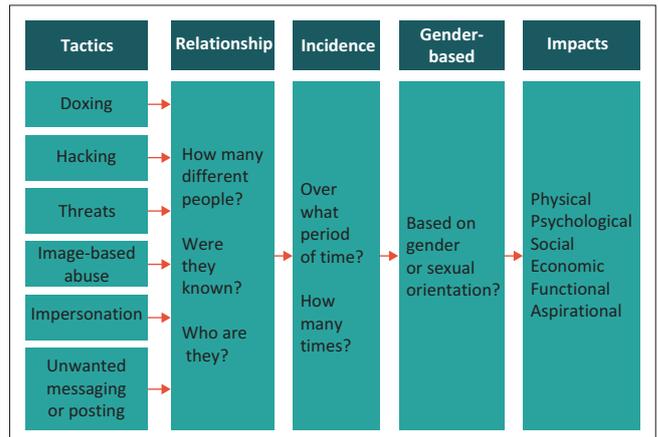

Source: Hinson, L., Mueller, J., O'Brien-Milne, L. & Wandera, N., 2018, *Technology-facilitated gender-based violence: What is it, and how do we measure it?*, International Centre for Research on Women, Washington, DC, viewed from https://www.svri.org/sites/default/files/attachments/2018-07-24/ICRW_TFGBVMarketing_Brief_v8-Web.pdf

FIGURE 1: Measures of technology-facilitated gender-based violence.
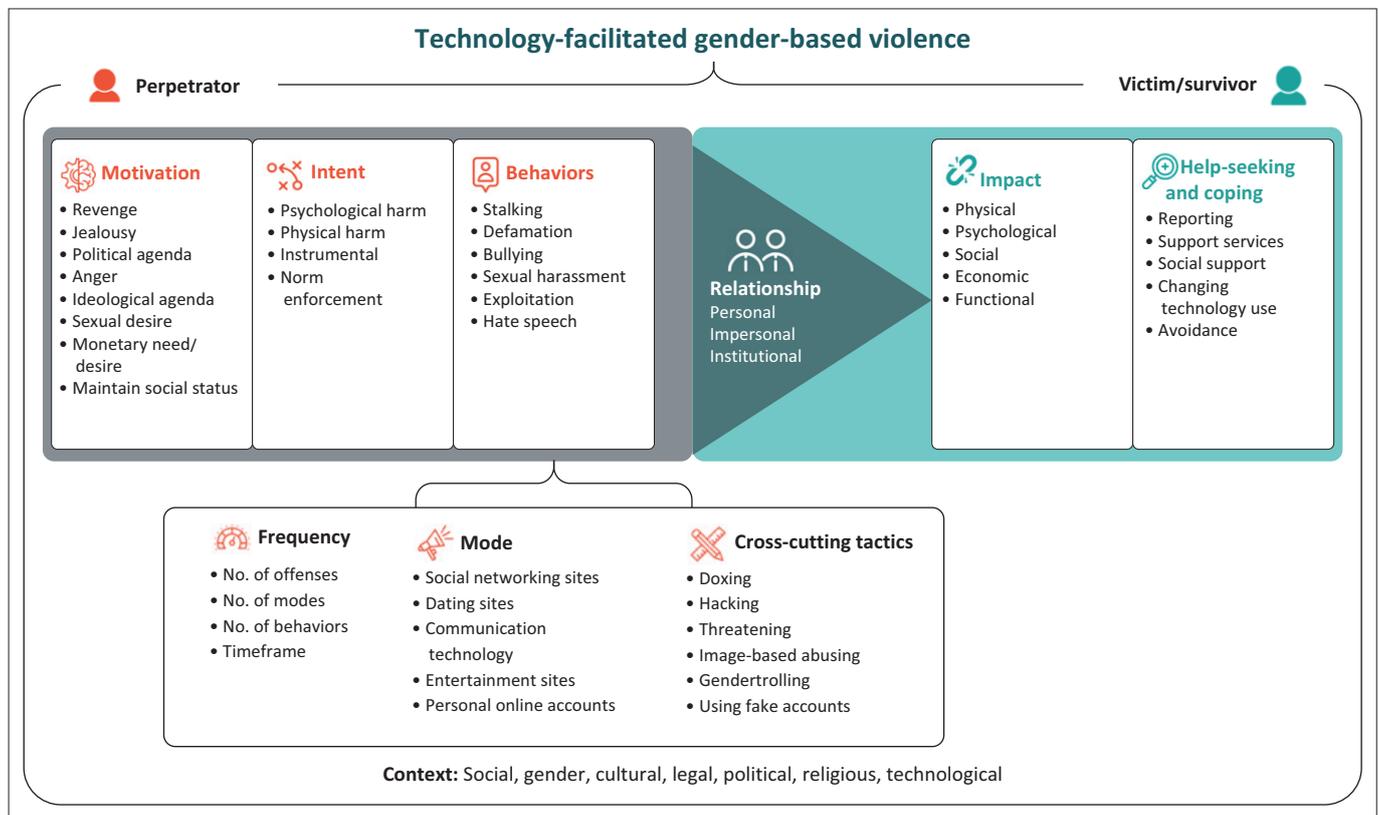
Source: Hinson, L., O'Brien-Milne, L., Mueller, J., Bansal, V., Wandera, N. & Bankar, S., 2019, *Defining and measuring technology-facilitated gender-based violence*, viewed from https://www.svri.org/sites/default/files/attachments/2019-03-25/ICRW_TFGBVMarketing_Brief_v3_WebReady_0.pdf

FIGURE 2: Conceptual framework of technology-facilitated gender-based violence.
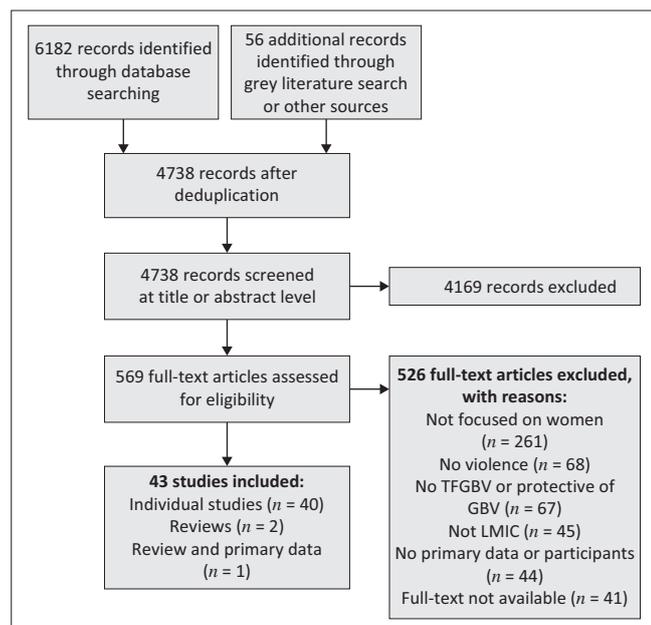
TFGBV, technology-facilitated gender-based violence; LMIC, low- and middle-income country.

FIGURE 3: PRISMA flow chart for this scoping review.

offer protection from, or respond to such violence. The majority of the studies ($n = 30$) examined the ways in which technology was utilised to perpetrate or facilitate violence against women. These studies are analysed in greater detail in the second article (Part Two) of this scoping review. Although the two categories – technology as a tool for enabling violence and technology as a means of protection or response were initially treated as mutually exclusive, two studies demonstrated that survivors of TFGBV subsequently appropriated the same technologies (e.g. public disclosures on X, formerly Twitter) to foster solidarity and support among other survivors. Nevertheless, there remains a relative paucity of evidence concerning the use of technology to enhance safety, provide protection or facilitate responses to violence against women. The rest of the studies ($n = 13$) addressed such interventions or instances where technology played a protective or responsive role.

These 13 studies reported the use of technology as a resource or guide, such as chatbots, mobile apps with informational content or decision aids. Several studies focused on technology-enabled reporting tools that linked survivors to formal support services, including helplines and trauma centres. Others highlighted the role of technology in fostering social support through online disclosures and peer communities. Three studies explored preventative uses of technology, including apps that identify safe areas or create protected virtual spaces for interaction.

Technology was most commonly used as a responsive tool before or after exposure to violence. This included safety planning tools, digital guides and connections to services. Another frequent function involved facilitating access to formal support structures. Some technologies also contributed to violence prevention, such as through crowd-sourced safety data or dedicated safe spaces. For example, a WhatsApp group in China offered a secure environment for female ride-share drivers to share harassment experiences, while social media platforms enabled survivors to find solidarity.

It is important to note that studies, which focused solely on digital activism, such as the hashtag movements like #MeToo, were excluded, as they analysed online content without involving human participants. We also excluded studies linking device ownership or connectivity to GBV protection, as these did not demonstrate direct use of technology in protective or responsive roles.

The intersection of violence, gender and disability in digital spaces

Studies highlight the unique vulnerabilities faced by adults with intellectual disabilities in digital spaces. A study conducted across Chile, Mexico and Spain found that social media and messaging platforms like WhatsApp were frequently used to perpetrate cyber-bullying, with survivors, most of whom were women, experiencing psychological distress and social isolation (Jenaro et al. 2018). These forms of TFGBV were often perpetrated by peers or known individuals, pointing to how familiar environments remain sites of risk.

Similarly, in the study by Huang and Wang (2023) in China, individuals with physical disabilities who used online video platforms to seek social and emotional support were also subject to online verbal abuse and commercial exploitation. These digital spaces, while offering a means to reclaim agency and social connection, also exposed participants to forms of violence that mirrored the offline marginalisation they already faced, reflecting the continuity of gendered and ableist harm across contexts.

In contrast, several studies highlighted the empowering potential of technology when used within disability-inclusive, safe and supportive frameworks. Marnewick et al. (2022) documented an intervention programme in Cape Town that equipped intellectually disabled learners with skills to use WhatsApp safely. Participants with co-occurring conditions like autism and cerebral palsy developed digital literacy, confidence and coping strategies to prevent cyber risks, illustrating the importance of proactive, preventative education. Similarly, the Malawi-based study by Lee and Massah (2020) demonstrated how low-cost technologies, such as WhatsApp and toll-free hotlines, were employed in disability-inclusive violence prevention programming. These tools enabled communication, awareness-raising and support-seeking among women and girls with disabilities who were subject to severe forms of violence, including forced sterilisation and mutilation. However, the study also identified ongoing gaps in systemic responses and disability data, reinforcing the need for targeted interventions grounded in intersectionality.

Digital platforms also serve as spaces of collective empowerment and solidarity for women with disabilities,

particularly in social movements. Lin and Yang (2019) examined how disabled women in China engaged with the #MeToo movement through platforms such as WeChat, using online communities like 'Sisterhood' to share their experiences, seek justice and challenge stigma. Survivors, often harmed by known individuals in positions of power, found emotional relief and agency through storytelling and mutual support, despite limited institutional redress. This participatory digital activism reflects a broader trend, where women with disabilities are reclaiming digital spaces to resist violence and articulate their rights. Yet, these efforts exist within fragile ecosystems of support and are frequently met with societal backlash, underscoring the urgent need for inclusive digital environments that both protect and amplify the voices of disabled women.

The intersection of sexual orientation and violence

Several studies offered valuable insights into the unique experiences of LGBTQ+ communities with regard to technology-facilitated violence. Individuals within sexual and gender minority groups are significantly more likely to encounter stigma and violence than their cisgender and heterosexual peers, a trend that extends into digital spaces, where such incidents frequently go unreported (Malta et al. 2023).

The intersection of violence and sexual orientation shows how structural inequalities are reproduced and intensified in digital spaces, especially for LGBTQ+ individuals and people with disabilities (Malta et al. 2023). While digital platforms offer connection and identity exploration, they also enable harassment, exclusion and abuse. In Bangladesh, Nova, Saha and Guha (2023) found that LGBTQ+ users of platforms like Facebook and Tinder faced threats, blackmail and online harassment, often motivated by extremist religious beliefs.

Many reported trauma, anxiety and fear, adopting coping strategies like blocking users, using aliases or avoiding platforms altogether. Similarly, Alichie (2023) reported that Nigerian LGBTQ+ users experienced online homophobia, reinforced by the *Same-Sex Marriage Prohibition Act*, which legitimised discrimination and led to digital self-censorship. These findings reveal how digital spaces can be both sources of community and environments of danger for LGBTQ+ people, especially in contexts where their rights are legally restricted or culturally condemned.

In India, Maji and Abhiram (2023) conducted a mixed-methods study highlighting the emotional and psychological toll of cyber-bullying on LGBTQ+ individuals. Cyber-bullying included verbal and sexual harassment, often from anonymous or homophobic users. The consequences were profound, ranging from depression and anxiety to self-injury and suicidal ideation (Maji & Abhiram 2023). Nonetheless, some participants reported finding strength and solidarity through online networks, engaging in digital coming out and support groups. The dual nature of digital environments – as

sources of harm and healing was echoed in Platero and López-Sáez's (2022) study of Spanish LGBTQ+ youth during the coronavirus disease 209 (COVID-19) pandemic. While social media offered avenues for identity exploration and social connection, youth also encountered hostility and anti-LGBTQ+ violence online (Platero & López-Sáez 2022). Transgender and non-binary individuals, in particular, reported heightened vulnerability, underlining the urgent need for targeted online support services (Platero & López-Sáez 2022).

On a more intervention-focused note, Malta et al. (2023) documented the development and testing of the Rainbow Resistance, the Dandarah app in Brazil. The app was co-designed with LGBTQ+ communities and aimed to address violence and discrimination through features like a panic button, mental health screening and mapping of safe services (Malta et al. 2023). Used by over 4000 individuals, the app played a crucial role in enhancing safety, facilitating access to support and documenting incidents of violence in schools, homes, healthcare settings and public spaces (Malta et al. 2023). Survivors shared how the app enabled them to seek protection and connect with shelters and counselling services. This intervention underscores the importance of community-led, inclusive digital tools in addressing technology facilitated violence (TFV) and supporting marginalised populations (Malta et al. 2023). These studies show that LGBTQ+ individuals face unique and compounded risks of technology-facilitated violence shaped by cultural, religious and legal factors. Yet, they also demonstrate how these communities use digital tools to navigate, resist and build resilience within hostile online environments.

What makes these survivors more vulnerable than the general female population

Firstly, the findings from the papers in this section suggest that women with disabilities and members of the LGBTQI+ community face heightened vulnerability to TFGBV compared to the general female population because of intersecting layers of marginalisation, structural inequality and social stigma (Alichie 2023; Jenaro et al. 2018). Heightened vulnerability stems from social isolation, dependency and barriers to digital literacy, particularly for women with intellectual disabilities (Jenaro et al. 2018). Studies have shown that women with disabilities often rely more heavily on digital technologies for social interaction, support and autonomy, yet they are simultaneously at greater risk of abuse through these platforms (Jenaro et al. 2018; Marnewick et al. 2022).

Secondly, LGBTQI+ individuals experience TFGBV as an extension of systemic discrimination and criminalisation of their identities (Alichie 2023). In many contexts, LGBTQI+ people face heightened surveillance, harassment and threats from both state and non-state actors, which often migrate to online spaces (Alichie 2023; Nova et al. 2023).

Mental health impacts and social stigma exacerbate the consequences of TFGBV for these populations. Survivors of

cyber-bullying and online harassment often experience symptoms of depression, anxiety and even suicidal ideation (Maji & Abhiram 2023; Platero & López-Sáez 2022). For people with disabilities, psychological harm from online abuse is intensified by existing social isolation, internalised stigma and the lack of accessible psychosocial support (Jenaro et al. 2018). These impacts often go unaddressed because of institutional neglect and the invisibility of these groups in mainstream GBV discourse.

Thirdly, several studies in this scoping review identified socio-economic and contextual factors, such as low income, rural residence and limited education, as contributing to women's vulnerability to TFGBV (Alsawalqa 2021; Bhimdiwala, Adavi & Arif 2024; Friend 2023; Kavasoğlu, Eratlı Şirin & Uğurlu 2023). These conditions often correlate with reduced digital literacy and limited access to privacy and security tools, which hinder women's ability to protect themselves online; these result in compounded vulnerabilities. Marital status was also noted in a few studies, with some findings suggesting that married women may be less exposed to TFGBV (Hashemi et al. 2024; Zagloul et al. 2022). However, this correlation remains inconclusive and requires further exploration.

Other studies emphasised that women with public visibility, particularly journalists and sports figures, face heightened TFGBV because of their presence in male-dominated or politicised spaces (Chen et al. 2018; Kavasoğlu et al. 2023; Koirala 2020; Yalcinoz-Ucan & Eslen-Ziya 2023). Female journalists reported self-censorship or reluctance to promote their work in response to harassment, while female athletes expressed frustration that visibility essential for branding and sponsorship also exposed them to body-focused harassment (Kavasoğlu et al. 2023). These cases illustrate how TFGBV not only undermines personal safety but also may have direct professional and economic consequences.

Impacts of technology-facilitated gender-based violence on survivors

Technology-facilitated gender-based violence significantly affects survivors across multiple dimensions, including psychological, physical, social, functional and aspirational.

Psychological impacts
Most studies reported significant psychological effects of TFGBV, including shame, guilt, anxiety, depression, post traumatic stress disorder (PTSD) and suicidal ideation (Maji & Abhiram 2023; Zagloul et al. 2022). The pervasive and intrusive nature of online abuse creates a sense of constant surveillance, heightening fear and distress. These impacts often lead to reduced self-esteem and social withdrawal (Aksar et al. 2020; Mas'udah et al. 2024).

Physical impacts
Technology-facilitated gender-based violence frequently extends into offline harm. Over half of the studies reported physical intimidation, assault, stalking and self-harm. Survivors often encounter violence from perpetrators who initially engage online, blurring the boundary between digital and real-world abuse (Sarkar & Rajan 2023; Tandoc, Sagun & Alvarez 2023).

Social impacts
Technology-facilitated gender-based violence contributes to social isolation, as survivors may retreat from digital spaces to avoid harassment, resulting in reduced support networks. Reputational attacks through technology can also lead to community-based stigma and exclusion (Hassan et al. 2020; Balabantaray, Mishra & Pani 2023).

Functional impacts
Many survivors altered daily routines for safety, such as relocating, changing commuting routes or deleting social media accounts. This disruption affected productivity and participation in work or education, with some reporting absenteeism or reduced performance (Asad & Fatima 2024; Kavasoğlu et al. 2023).

Aspirational impacts
Technology-facilitated gender-based violence negatively affected survivors' goals and ambitions. Fear of harassment discouraged engagement in public life, digital platforms and leadership roles, thus reinforcing existing gender disparities (Asad & Fatima 2024; Chen et al. 2018).

Economic impacts
Several survivors reported economic harm, including blackmail using non-consensual recordings. These forms of digital exploitation jeopardised personal safety, reduced income opportunities and contributed to long-term financial insecurity (Hassan et al. 2020; Kwan 2022).

Discussion

This scoping review set out to explore the existing body of evidence on TFGBV in LMICs with a particular emphasis on the experiences of women with disabilities. One of the most striking findings was the near-total absence of peer-reviewed empirical studies that explicitly focus on women with disabilities in the context of TFGBV. This is a significant oversight, given extensive literature demonstrating that women with disabilities face heightened vulnerability because of overlapping structural disadvantages, including social isolation, economic dependence and a lack of access to digital literacy and assistive technologies (Banks, Kuper & Polack 2017; Huang & Wang 2023). The lack of focused research on this population not only limits our understanding of their experiences but also perpetuates their invisibility in both academic and policy spheres.

Despite this gap, the scoping review revealed critical insights into how TFGBV manifests among women more broadly in LMICs. Intersectional vulnerabilities, such as being from rural areas, low-income backgrounds or marginalised ethnic or religious communities, further compound the risks and

consequences of TFGBV. While only a small subset of studies examined these dimensions in depth, they indicate how overlapping forms of oppression can intensify the impacts of digital violence (Bhimdiwala et al. 2024; Koirala 2020). Although women with disabilities are known to face disproportionately high rates of GBV in offline contexts, this review found a near-complete absence of empirical studies exploring their specific experiences of TFGBV in LMICs. This silence in the literature is troubling, especially given broader research that highlights the compounded risks women with disabilities face because of factors such as dependency on caregivers, communication barriers, a lack of access to digital safety tools and social isolation (Jenaro et al. 2018; Marnewick et al. 2022).

For example, survivors with intellectual disabilities have reported being targets of cyber-bullying through widely used platforms like WhatsApp and Facebook, often by known individuals such as classmates or acquaintances. The psychological toll of such abuse, marked by fear, sadness and depression, demonstrates the urgent need for TFGBV interventions that are accessible, inclusive and tailored to the needs of women with various forms of disability. In parallel, the intersection of sexual orientation and digital violence was vividly illustrated in several studies focusing on LGBTQ+ individuals in countries such as Bangladesh, Nigeria and India. LGBTQ+ users reported severe digital abuse, including online harassment, verbal and sexual bullying, blackmail and threats of outing, often driven by societal, religious or legal hostility (Alichie 2023; Maji & Abhiram 2023; Nova et al. 2023). In contexts where LGBTQ+ identities are criminalised or heavily stigmatised, perpetrators leveraged online platforms to silence, shame and endanger queer individuals.

Across all the studies reviewed, TFGBV was shown to exert profound and overlapping impacts on survivors' lives, psychological, physical, social, functional, aspirational and economic. The psychological toll was most prominent, with many survivors reporting experiences of anxiety, shame, suicidal ideation and depression (Maji & Abhiram 2023; Zagloul et al. 2022). These were often compounded by social isolation, as survivors retreated from online spaces or were ostracised by their communities because of reputational damage from leaked content or harassment. The functional and aspirational impacts were equally troubling; survivors reported relocating, altering their daily routines or withdrawing from education because of safety concerns. In professional contexts, women working in journalism, sports, and sex work faced digital blackmail and reputational attacks that directly undermined their income and opportunities for advancement (Chen et al. 2018; Kavasoğlu et al. 2023).

These findings challenge the notion of TFGBV as a solely digital phenomenon; instead, it emerges as a form of violence with real-world consequences that compromise survivors' autonomy, safety and future prospects. In light of these findings, there is an urgent need for inclusive, intersectional and survivor-centred approaches to addressing TFGBV. This includes investing in research that foregrounds the experiences of the most marginalised, including women with disabilities and LGBTQIA+ individuals, in diverse LMIC contexts. Interventions must be co-designed with affected communities, taking into account not only their technological needs but also their social, cultural and political realities. Promising examples such as the *Rainbow Resistance Dandarah* app in Brazil, which includes safety features designed by and for LGBTQ+ users, illustrate how digital tools can be reimagined as instruments of safety and empowerment. However, such efforts remain the exception rather than the norm. Systemic change will require coordinated efforts across digital policy, education, public health and gender justice sectors to ensure that digital spaces are safe, inclusive and equitable for all women.

Conclusion

This first part of the scoping review offers critical insights into the landscape of TFGBV in LMICs, highlighting the pervasive and multifaceted nature of such violence. The findings confirm that TFGBV is not limited to the digital realm; rather, it is deeply entangled with offline realities, manifesting in physical, psychological, social, functional, aspirational and economic harms. While the use of technology to enable violence was the most prevalent theme, there is also emerging evidence of its use as a protective and empowering tool, particularly through community-based and survivor-led digital interventions. Yet, such protective uses remain underexplored and under-implemented, and the overall evidence base is still uneven and fragmented, especially in relation to marginalised populations.

The review also reveals critical gaps that demand urgent attention. Most notably, there is a stark absence of focused research on the experiences of women with disabilities in the context of TFGBV, despite existing evidence suggesting that these groups are at heightened risk. Similarly, intersectional dimensions such as class, rurality, ethnicity and digital literacy remain understudied. To our knowledge, this scoping review is novel in its approach to capturing TFGBV evidence focused on the intersectionality of technology-facilitated violence and women with disabilities in LMIC settings. The next part of this review will provide insights into the trends; common behaviours and characteristics of perpetrators and survivors, risks and protective factors against TFGBV.

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CRediT authorship contribution

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The authors declare that all data that support this research article and its findings are available in the article and its references.

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