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Unmasking digital threats in the pursuit of human rights and environmental defense in La Guajira, North Colombia

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ABSTRACT

Those engaged in the defense of human and land rights, particularly in areas of resource extraction, are increasingly exposed to violence, including a growing number of digital threats. In Colombia, the legacy of decades of armed conflict has overshadowed concerns regarding digital rights, resulting in reports of digital surveillance and online harassment without the requisite judicial oversight. Due to the paucity of research on this topic, this study examines the experiences of 37 environmental and human rights defenders (EHRDs) in *La Guajira*, North Colombia, who are leveraging information and communication technologies (ICTs) to amplify their concerns in an extractivist region with a history of human rights abuses. The findings indicate a significant prevalence of technology-facilitated violence (TFV) against EHRDs, including death threats, hacking, and hate speech through various digital channels. The spectrum of threats is attributed to several sources, including armed groups, multinational companies, and individuals within the affected communities. The study emphasizes the necessity of adopting a comprehensive approach to violence, integrating TFV into a more expansive conceptualization of violence. Failing to acknowledge the prevalence of TFV may result in an incomplete understanding of the experiences of EHRDs and the consequences of such violence, including self-censorship and emotional harm. Given the increasing overlap between digital and physical violence, we present a framework to enhance the capture and understanding of TFV. Furthermore, this study demonstrates the shortcomings of current security protocols in addressing the multifaceted violence directed at EHRDs due to their opposition to extractive agendas.

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1. Introduction

Particularly in conflict-affected environments, ICTs are crucial for oppressed individuals with restricted access to conventional public domains, like mainstream media. ICTs are often seen as cost-effective, fast, and accessible tools for organizing activities, mobilizing

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communities, and sharing often overlooked perspectives (Daffalla et al., 2021; Kavanaugh et al., 2016; Strand & Svensson, 2023). This phenomenon is also evident in northern Colombia, particularly in *La Guajira*, where mostly Wayúu Indigenous environmental and human rights defenders (EHRDs)[1] have opposed systemic marginalization, territorial dispossession, ecological degradation, and extractive expansion of mining and wind energy projects. More recently, they have utilized ICTs to raise awareness and share concerns to a broader audience (Gómez & Velásquez, 2018; Osorio García de Oteyza et al., 2021; Schwartz, 2020). However, a growing body of research highlights the rise of technology-facilitated violence (TFV) online. This has resulted in, amongst others, a reduction in secure spaces and self-censorship (Nadim & Fladmoe, 2021; Sogge, 2020). As the boundaries between digital and physical violence blur, the previously optimistic view of ICTs is increasingly being questioned (Morales, 2023; Strand & Svensson, 2022). Notwithstanding the rise in violence against EHRDs, TFV is often disregarded in analyses and reports (Global Witness, 2022, 2024; Le Billon & Lujala, 2020). This neglect persists even though ICTs play a critical role in shaping how violence is perpetrated and experienced, with BIPoC activists often particularly affected by violence (Business & Human Rights Resource Centre, 2020; Digital Democracy, 2023; Tsatsou, 2021). In Colombia, violence targeting EHRDs challenging entrenched power structures has sharply increased, making it one of the most dangerous regions globally for such advocacy (Albarracín et al., 2023; Global Witness, 2022).

Several incidents show that political violence in many Latin American countries has evolved through technology (AccessNow, 2022). In Colombia, the government has initiated investigations into the police's purchase of Pegasus spyware, following accusations of illegal communications interceptions by security forces (Buschschlüter, 2024). While primarily NGO reports highlight widespread use of TFV, like spyware or internet shutdowns targeting activists, comprehensive academic research, exploring TFV in depth remains limited, particularly in the Global South, including Colombia. As Morales (2024) notes, Colombia is often underrepresented in TFV research. Generally, it seems that TFV against activists is frequently underreported due to the inherent difficulties in defining, measuring, and narrating such incidents in comparison to physical violence. Furthermore, there are deficiencies in awareness, legal frameworks, and institutional responses, which collectively contribute to this oversight (Backe et al., 2018). Given this research gap, this study addresses the relevant research question: What forms of technology-facilitated violence do EHRDs in *La Guajira* experience when using ICTs for their defense, and how are these threats conveyed?

To obtain a comprehensive understanding of EHRD's personal experiences in northern Colombia concerning TFV, this study is founded on 37 interviews. It expands on existing research by specifically concentrating on EHRDs, as digital spaces have emerged as critical battlegrounds for activist resistance and oppression (Daffalla et al., 2021; Stoycheff et al., 2018). To provide theoretical and contextual insights, the study will first map a landscape of TFV and activisms before examining the specific case of activism in northern Colombia. We perceive it imperative to comprehend violence in its complexity, as it manifests in many interrelated forms, including physical, psychological, structural, and, increasingly, digital. Failing to account for everyday TFV, particularly against activists, is a significant omission in any analysis of contemporary oppression, given the evolving nature of the phenomenon. A holistic

conceptualization of violence acknowledges the complexity of how power and domination operate in both physical and virtual spaces. By introducing a framework focusing on TFV against activists, we aim to offer new insights and identify some factors that may influence this phenomenon.

2. The Intersection of environmental activism, ICTs, and violence

Emerging technologies have created new opportunities, including ICT-enabled activism, that are mainly reshaping the political and social landscape. Such benefits include the potential to generate international attention and facilitate engagement (Zeitzoff, 2017). Scholars have also examined how Indigenous organizations have embraced these technologies to develop new forms of cultural resistance, communication, and mobilization (Frazer & Carlson, 2021; Lupien et al., 2021; Salazar, 2008; Yu & Matasaganis, 2020). Alongside the positive aspects, the drawbacks of utilizing ICTs have also been widely recognized, emphasizing risks that include digital repression, surveillance, hate speech, cyberstalking, doxing, and various other forms of TFV (Brydolf-Horwitz, 2022; Earl et al., 2022; Michaelsen, 2017). Terms like online violence, cyber violence, and technology-facilitated violence are commonly used to describe incidents of violence facilitated by technology or occurring in the digital realm (Henry & Powell, 2015). According to Gregory (2019, p. 1), 'pessimism currently prevails around human rights globally, as well as about the impact of digital technology and social media in supporting rights'. Activists globally have reported the shrinking of secure (online) spaces and a rise in incidents of TFV, including through SMS, calls, or social media (SM) (Front Line Defenders, 2022). The notion of *shrinking civic spaces* encompasses a range of restrictive measures, including the public stigmatization and persecution of civil society organizations, along with intensified surveillance operations designed to foster a climate of fear and self-censorship among activists and dissenters (Annan et al., 2021; Della Porta & Steinhilper, 2022; Hummel, 2020). This phenomenon is often associated with regimes with authoritarian tendencies that possess advanced (digital) surveillance capabilities. However, this often overlooks the fact that (mostly) non-state actors also wield significant coercive power beyond formal measures in democracies. Being ranked as a defective democracy with restricted freedom rights, Colombia faces significant deficits in digital civil liberties. Privacy concerns arise from government surveillance of internet activities, and journalists face digital harassment through legal actions, while unequal access to the internet in rural areas exacerbates these challenges (BTI, 2024; Freedom House, 2024a). As Sogge (2020, p. 85) notes, '[…] enforcement also takes place through informal pressures ranging from smear campaigns via (social) media to threats by «out-sourced» purveyors of violence'. In this sense, Sogge highlights the influence of private interests, particularly in the agrarian and extractive industries, and their ability to capture state power. Despite regional variations, repression against communities and HRDs resisting natural resource exploitation has become a common trend, driven by the expanding use of ICTs.

The immediacy, rapid spread, broad reach, and ease of sharing and replicating information offered by ICTs have led to the emergence of new forms of harm that enable violence to be perpetrated relentlessly, both online and offline (Gabriels & Lanzing, 2020; Lumsden & Harmer, 2019). Morales (2023) highlights that the boundaries between digital and physical violence are increasingly blurred and asserts that 'social media is a critical

element of contemporary ecologies of violence' (Morales, 2024, p. 1). Therefore, viewing the digital realm as an extension of our daily experiences rather than as a separate entity results in increasingly complex forms and potentials of violence. This perspective demands a more comprehensive definition of violence that includes forms of TFV and does not overlook their significance. Just as in the physical realm, underlying power imbalances result in the disproportionate vulnerability of historically marginalized groups to the effects of TFV (Armstead et al., 2019). Furthermore, the often-made distinction between body and mind often leads law, policy, and academia to overlook the reality that social and psychological harms are embodied, tangible, and real. Harms in the so-called 'virtual' world can have significant physical and psychological effects and are increasingly central to how individuals experience and navigate their everyday lives (Henry & Powell, 2015). Even though not all digital threats culminate in physical violence, 'threats are themselves a human rights violation and can also be considered acts of torture' (Lawlor, 2021), since they may leave people in constant anxiety and undermine defenders' credibility and efforts to fight human rights violations (Abbas et al., 2019).

Particularly high-risk individuals possess factors, such as celebrity, that can increase their vulnerability to digital attacks, potentially amplifying the severity of harm they may experience (Warford et al., 2022). A report on online hate speech against activists in Guatemala revealed its use to silence critical voices, particularly from marginalized, often Indigenous communities, similar to the threats faced by journalists in Colombia on Twitter after publishing reports on the armed conflict (Abbas et al., 2019). This demonstrates that ICTs, despite their empowering potential, are increasingly employed by contenders to dissuade individuals from engaging in activism (Earl et al., 2022). Unlike physical violence, TFV can persist even after EHRDs leave their territory, causing a lingering sense of insecurity (Front Line Defenders, 2022), potentially discouraging other EHRDs due to concerns about apprehension (Stolle, 2023, p. 201).

3. Methodology

3.1. Case selection

Over the decades of armed conflict between guerrillas, state armed forces, and paramilitaries in Colombia, little attention was devoted to the protection of digital rights despite the prevalence of violence in SM (Morales, 2023, 2024). According *to Fundación Karisma*, a Colombian human rights organization, a surveillance apparatus was established in Colombia during the conflict to spy on citizens without judicial orders. Even if the exact scope is unknown, 'there is plenty of evidence that illegal surveillance is a reality in Colombia, particularly for those seeking to scrutinize the powerful' (Erb, 2019). Morales (2024), who has conducted research on TFV among Colombian youth, asserted that his findings highlight the need for contextualized approaches to this issue. He argues that understanding the bodies, subjectivities, and socio-cultural contexts of those who experience and engage with TFV is crucial for grasping its impact, reach, and scale. This underscores the importance of contextualizing incidents of TFV while taking various external and internal factors into account.

Even though Colombia is often cited as one of the longest-standing democracies in Latin America, it has a history of widespread violence and human rights abuses. The

country faces immense challenges in guaranteeing political rights and civil liberties, a situation also reflected in its internet infrastructure, with significant disparities in access between urban and rural regions (Freedom House, 2024a). Particularly in resource-rich regions, the presence of armed groups, illegal mining operations, and powerful business interests has made Colombia one of the most dangerous countries for human and land rights defenders (Freedom House, 2024b; Global Witness, 2022). Alone in 2022, 48% of the 401 activists killed (of which around 1/5 were Indigenous) were actively engaged in defending land, environmental, and Indigenous rights (Front Line Defenders, 2022).

This widespread violence is also present in northern Colombia, particularly in rural areas of *La Guajira*, where the Wayúu people face systemic marginalization, limited access to basic rights and services – e.g., water, education, and healthcare – and forced displacement associated with environmental degradation in the context of large-scale mining and wind energy projects.[2] Amid ongoing processes of territorial dispossession and extractive expansion, EHRDs are demanding reparations for those affected, and community-defined transformations rooted in local rights, knowledge systems, and territorial autonomy (IEA, 2023; Puerto Chaves & Corral Montoya, 2022; Ruiz Leotaud, 2022).

Internet access among the Wayúu population is primarily through mobile phones in urban areas, with increasing use in rural zones, but infrastructure and support for secure connectivity remain limited. Digital literacy is rather low, with existing education focusing on hardware rather than digital threats. There is a significant information gap due to the lack of culturally and linguistically appropriate resources, especially in Wayuunaiki (Fernández Jinnu & Alvarez Malvido, 2022). EHRDs, particularly from Wayúu Indigenous communities, face daily threats from various actors, including neo-paramilitary groups.[3] Mining and wind park megaprojects have been linked to threats against local movements and NGOs denouncing human rights violations, armed group presence, and regional militarization (Front Line Defenders, 2019; Ramirez et al., 2023). These threats are often conveyed through social networks, messaging apps, and phone calls (Global Witness, 2021; Villalba, 2021), underscoring the necessity to view violence and ICTs as inextricably linked. Media reports have also documented violent text messages to prominent EHRDs in the region (Notiuruguay, 2019). A report by Front Line Defenders (2022) and the national newspaper *El Espectador* indicates that 'threats are part of the daily life of social leaders in Colombia. Social networks and instant messaging services have also been a channel used by violent individuals to intimidate communities' (Villalba, 2021).

3.2. Data collection

To explore the forms of TFV that EHRDs in *La Guajira* experience when using ICTs for their defense and how these threats are conveyed, a qualitative research approach was employed, providing context-specific insights. Between June and August 2023, two researchers conducted 37 semi-structured interviews with EHRDs and social leaders (n = 26) in Indigenous Wayúu territories across the region and civil society organizations (n = 11) working in environmental defense, human rights, and digital rights. The research was conducted following principles of *do-no-harm* and the Belmont Report's guidelines and was approved by the university's academic ethics board (78/2022) (The

National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research., 1979; Wood, 2006). Participants were fully informed about the study's purpose and the voluntary nature of their involvement through a clear informed consent process (Klykken, 2022). Dedicated to minimizing knowledge extractivism (Datta, 2018), online and in-person workshops on digital security with the participation of over 50 individuals, knowing that many experience TFV, were organized. These sessions offered participants the opportunity to learn how to better safeguard themselves online. Additionally, drawing on the findings of this research and interviews with HRDs from other conflict-affected contexts, a comic strip highlighting digital security considerations for activists was developed and digitally distributed in Colombia (Charikleia et al., 2025). Access to the interviewees and workshop participants was facilitated through local NGOs, academic networks, private connections, and recommendations (snowball sampling) (Naderifar et al., 2017). Our inquiry was relayed to potential participants through our direct contacts. Subsequently, individuals contacted us independently or consented to be contacted. Most interviews were conducted in Spanish, and during some workshops, a community member facilitated translation into the local language *Wayuunaiki*. Most interviews were recorded with the interviewees' consent and transcribed offline using *Open AI Whisper* (an open-source speech-to-text model in Python), with manual corrections applied during the process. In some cases, interviewees preferred not to have their audio recorded, so written notes were used instead. The interviews, guided by a semi-structured questionnaire tailored to EHRDs or NGOs, included approximately 19 questions on ICT-enabled activism, digital behaviors, data security perceptions, digital risks, and technical challenges and needs.

The participants were not compensated beyond food, beverage, and travel expenses, emphasizing voluntary participation without misleading incentives. This also ensured that no additional personal information was collected for billing purposes. The data is securely encrypted using VeraCrypt and exclusively available to the researchers, guaranteeing strict confidentiality.

3.3. Data analysis

This paper adopts a case study approach (Stake, 1995) to explore how EHRDs in Colombia experience TFV. The study was guided primarily by abductive and deductive reasoning (Reichertz, 2004, 2010). Abduction enabled the formulation of plausible explanations grounded in surprising empirical findings – such as the normalization of digital death threats, the strategic use of WhatsApp, and the emergence of deepfakes – without imposing a priori theoretical frameworks. These insights were subsequently connected to broader theories on structural violence, intersectionality, and shrinking civic spaces through deductive interpretation. While the research was not inductive in the strict sense, the analysis remained open to patterns emerging from the data, drawing inspiration from Grounded Theory (GT) in its emphasis on context-sensitive discovery, involving regular comparison across interviews to refine categories, identify thematic patterns, and challenge assumptions (Corbin & Strauss, 1990, 2014). The analytic process thus aimed to balance theory-generating and theory-testing elements (Muno, 2003). While the findings are not intended to be generalizable, they offer in-depth, situated insights into how technology-facilitated violence is experienced and understood within a specific socio-political setting.

Both authors began with detailed, line-by-line coding of the data, drawing inspiration from GT's open coding approach. These initial codes were then organized into broader sub-categories through a process resembling axial coding, reflecting a grounded theory – inspired analytical strategy. Through this iterative process, data excerpts were sorted and re-sorted to identify patterns, relationships, and emerging themes grounded in the data itself (Corbin & Strauss, 2014). Overall, five main categories were identified throughout selective coding, namely 'digital realm', 'physical realm', 'contextual factors', 'connection between physical and TFV', and 'background information interviewees. Of these, the category of TFV played the primary role in the analysis, while the others provided contextualized understanding. These main categories contain numerous subcategories, including 'forms of TFV', and a total of 2245 codes (see excerpt in Appendix). While inter – or intra-coder reliability tests were not conducted, this decision aligns with a reflexive approach to qualitative research that emphasizes interpretation over replication. Instead of seeking coder agreement, rigor was ensured through transparent documentation of coding decisions and ongoing analytical dialogue among the two researchers of this article. This reflexive engagement acknowledges the co-constructed nature of meaning, prioritizing depth, context, and accountability over standardization (Mertens, 2012). Despite efforts to remain critical and reflective, we acknowledge that our understanding of local and social norms may still shape our analysis and lead to biased interpretations. Author 1, a German conflict and peace researcher, brings expertise on TFV, while author 2, a German-Colombian political scientist specializing in environmental conflicts with strong ties to western Colombia, offers partial insider perspectives. However, neither author is embedded in the specific context of *La Guajira*, a region characterized by cultural and social diversity.

4. Empirical findings: TFV against EHRDs in resource extraction contexts

This section summarizes key findings, highlighting common forms of TFV, observed patterns, and potential perpetrators.

4.1. General ICT use

The affordances and structures of SM platforms significantly influence how TFV is perpetrated. Notably, although all interviewees had access to a smartphone, not all community members possess a mobile phone, or share one with family members (I1).[4] A common theme in the interviews was the impact of precarious infrastructure, like frequent electricity outages and poor reception (I3). Regarding SM, all respondents indicated that they primarily utilize WhatsApp, as it is frequently included in their mobile plans through *Free Basics,* and mobile data is often perceived as costly (I6;29). Furthermore, respondents indicated using additional applications, including Facebook Lite, Twitter/X, and Instagram, in their everyday lives. Only a few respondents reported using alternative messaging applications like WhatsApp Plus (I4), Telegram, or Signal. In certain instances, Telegram was perceived as a highly secure app (I10–12). Some respondents indicated that they create video and audio content for online platforms like YouTube, podcasts, and short documentaries, as well as engage in commentary on social media posts pertaining to socio-political matters. Additionally, the interviews

indicated that a significant proportion of participants rely on technology primarily for fundamental tasks and are not well-versed in the intricacies of privacy settings. Some respondents even expressed discomfort in using ICTs due to uncertainty about how to manage applications (I6;20).

4.2. Exploring different forms of TFV against Colombian EHRDs

The interviews revealed that intimidating messages and death threats via SM or phone calls were common and often normalized. Some respondents had faced physical assaults and attempted murder, which may explain their relatively diminished fear of online threats. One interviewee enrolled in a government protection program observed that, although bodyguards are provided, there is no provision for a second phone, and digital security is not prioritized. Furthermore, no training on digital security was offered to address the risks of TFV. This highlights a lack of attention on digital security in Colombia, contributing to impunity, mistrust, hostility, and insecurity.

4.2.1. Violent threats, extortion, and intimidation strategies

The interviews indicated that instances of TFV manifests in various forms and attacks range from violent threats and messages (I7;13) to exposure to videos of torture and murder. The most common form of attack has been direct threats and intimidating messages aimed at undermining EHRDs' activism. One interviewee indicated that videos disseminated by armed actors depicting the torture or killing of family members have been circulated. This demonstrates that intimidation directed towards EHRDs and their family members can be readily transmitted by (un-)identified actors with minimal time and effort (I31). To illustrate, I19 recounted instances where photographs of family members were disseminated and exploited for extortion and intimidation purposes. Similarly, I21 received a phone call during which personal details about their family and location were disclosed, suggesting the caller was aware of this information to cause harm. In some instances, armed actors gathered information about EHRDs and their families by questioning community members and checking mobile phones for images and data (I4). This illustrates that specific data are received and obtained through non-technical channels and subsequently employed to inflict harm via digital means. Due to threats to their families or communities, some individuals have reduced their online activity and become more cautious to avoid placing their communities at risk, particularly regarding political activities: 'We shut down the social networks for a while and started with a slightly lower profile so as not to endanger the communities' (I36:28). Some respondents indicated that they are indifferent to the risk of being affected by violent attacks, acknowledging that they are placing themselves at risk (I7;35). One interviewee stated that they had become inured to the attacks, which occurred with such frequency that they ceased to register. While the majority have accepted the notion that they are unable to safeguard themselves from harm if they wish to persist in their pursuit of rights, others have acknowledged a lack of awareness regarding the implications of their online conduct and the associated risks (I1;4).

One interviewee described an incident where a photo of a grave bearing their name was posted on Facebook, along with a threat to stop their activities or face harm: '(…) much fake news. Now again, (…) they made it seem like I had been killed' (354). This

highlights how disinformation can be weaponized to instill fear and threaten individuals, with personal photos intensifying the threats – capabilities further amplified by affordances of SM platforms. The interviews indicate that pamphlets, which were previously distributed in person, are now increasingly shared on SM platforms like Facebook as tools of intimidation (I37). This indicates a shift in the way that direct threats are now easily and rapidly circulated. In another instance, I21 received a phone call demanding payment of ten million Colombian pesos (approximately $2,550 USD) to prevent the release of altered content online that could jeopardize their career, serving as a clear example of extortion and the potential threat of doxing to exert pressure on reducing their involvement in socio-political activities.

Most respondents indicated that threats are received through various channels, including WhatsApp, Facebook (Messenger), text messages, Twitter, and regular phone calls (I3;4;7;29), illustrating that multiple spaces are impacted. When asked how attackers might obtain their private contact information, some noted that their numbers are publicly accessible due to their political activism, while others speculated that attackers could have acquired them from large WhatsApp groups they belong to. I4 emphasized the risks associated with these WhatsApp groups, which are common in Colombia and often involve discussions with many unknown participants. However, none of the interviewees could definitively explain this issue.

4.2.2. Hate speech and disinformation

The second most frequently cited issue among interviewees was the experience of hate speech and attacks due to their opposition to the government (I13), local authorities (I14), mining companies (I9), and the construction of wind farms in the region (I5). I13 reported that they have been accused on online platforms of having links with paramilitary groups. While most threats originate from socio-political engagement, there have been instances where hateful comments, like those observed on Facebook, have emerged in the context of posts without explicit political content, underscoring that online attacks against Wayúu activists occur irrespective of their post's nature (I11;29), with numerous reports of racist and sexist attacks (I1). This illustrates that factors such as ethnicity, race, and gender often play a significant role in shaping the nature of violence that is inflicted (Roshani, 2016; Tsatsou, 2021). I37 highlighted how their voices are often silenced by stigmatization and marginalization, with I32 linking this to Colombia's racist and patriarchal society. I32 also noted that racist comments and hate speech have significantly affected their well-being, revealing the lasting effects of such violence.

Several respondents reported being directly targeted by disinformation, often accompanied by an increase in hate speech (I37). Disinformation on social media platforms like Facebook included false claims about the political activities of these organizations, fueling polarization and misrepresenting their efforts. Additionally, I26 pointed out the role of multinational companies in the region in spreading disinformation and influencing information flows, potentially manipulating civil society perceptions.

4.2.3. Hacking, doxing, and digital surveillance

While the aforementioned forms of TFV were the most prevalent, other types, like hacking and doxing, were also selectively observed, indicating that EHRDs face a

diverse array of TFV. This suggests that oppression and intimidation tactics are not restricted to a single approach; rather, they are contingent upon the capabilities and interests of the perpetrator. For example, I28 voiced concern about the rising incidence of information theft occurring frequently in their surroundings. Five interviewees recounted experiences of being hacked (e.g., on Facebook and Gmail), with perpetrators interested in obtaining sensitive information pertaining to them and their associated organization. I4 suggested that another political organization may have stolen information and claimed credit, demonstrating the complex, competitive dynamics of the region's socio-political landscape. Five informants disclosed the creation of fake profiles using their personal data and images from SM, spreading false information under their names. These harmful actions on SM, like distressing memes, are amplified by technological capabilities of SM. Interviewees I27 and I21 reported that memes and manipulated images of them were circulated without their consent, often through fake profiles on platforms like Facebook. For instance, I13 noted that a personal photograph had been altered to depict them holding a firearm and was subsequently shared on SM. Additionally, I1 highlighted an increase in incidents involving deepfakes, prompting some individuals to exercise caution in their online sharing. They became increasingly aware of the risks that their information and images could be misused, distorted, or taken out of context (I23).

A further recurring concern, identified in the responses of seven interviewees, is the perception of being subject to digital surveillance. I35 (35) assured that they were monitored since others were interested in keeping track of their activities: 'It is evident that our activities are being monitored and recorded.' When inquired about potential perpetrators, interviewees expressed uncertainty but suspected that government and paramilitary actors might be involved, as they likely possess the necessary technical capabilities. This indicates that interviewees assess actors by their capacities and interests, with 13 avoiding sensitive phone discussions to reduce the risk of surveillance. Instead, they preferred to invite individuals to their homes or other locations for face-to-face discussions regarding delicate topics. This reflects the perception that digital communication is insecure in some situations, while in-person interactions are preferred for sensitive conversations.

The less frequently mentioned form of TFV involved the disruption of internet access, which restricts the right to information. I4 documented cases in which armed actors deliberately targeted and destroyed internet infrastructure to hinder the dissemination of specific online content. This demonstrates the capacity of certain actors to dismantle infrastructure to silence dissenting voices.

4.3. Perpetrators of TFV

It is crucial to examine the contexts of violence and identify those responsible. Nevertheless, identifying perpetrators in the digital domain presents a distinct set of challenges compared to the physical world, largely due to the intricate nature of tracing individuals' identities. Most respondents indicated to be unsure of who was behind the threats and intimidation, as largely because most were transmitted through fake profiles or suppressed numbers created for deception: '[They, the perpetrators,] use the networks to threaten, yet they never present themselves through their real profiles. It is unlikely

that any of them would engage in a public debate, yet they do engage in debate through fake profiles' (I11:33).

In contrast to absolute uncertainty, others indicated that they have suspicions but no concrete evidence to support them: 'Tracing the chain of events leading to these actions [of TFV] is not a simple task' (I36:37). Respondents frequently reported having multiple contenders, including multinational companies, their own government, politicians, paramilitaries, and even people within their own ranks – and each with unique motivations and capabilities (I1;5;33): 'Sometimes we have many enemies – the companies, the multinational corporations, and even the government (…)' (I35:95). According to I7 and I37, social leaders often find themselves in conflict with specific multinational companies in the region, like Glencore – the Swiss owner of the largest open-pit coal mines in Latin America, *El Cerrejón*. However, it is difficult to make concrete accusations due to the involvement of other economic and political actors associated with these companies, who may also be responsible for the threats (I4). Moreover, in other instances, individuals refrained from openly identifying specific actors or illegal armed groups threatening them, instead referring to them as 'bad guys' (I4). Some chose not to disclose names or group affiliations due to fear and concerns about personal safety. According to I3/4, paramilitary actors frequently requested the identities of activists in the region and subsequently issued targeted threats via SM or phone.

Referring to threats from within their own ranks, I27 explained that other social leaders might resort to violence out of jealousy of the achievements and fame of others. Several interviewees also highlighted the longstanding internal conflicts within the Wayúu communities, which stem from divergent interests (I5): While some are employed by multinational companies (operating in coal mining and wind park industries), others actively oppose them, occasionally leading to escalations of violence and internal threats within own communities and families (I3;32). I12 mentioned that 'it must be people who are close to you because if you get a WhatsApp message, it's because there are people who know you and have access to your number (62).'

5. Discussion

Our study examines the various forms of TFV experienced by EHRDs in *La Guajira* who are opposing extractivism in the region, thereby contributing to two key areas: 1) gaining insights into forms of technology-facilitated violence EHRDs encounter in their daily lives and 2) broadening the understanding of violence (against EHRDs), which frequently overlooks digital forms. Generally, this study aims to enhance the findings of e.g., human rights organizations like Global Witness (2024) and Digital Democracy (2023), which provide detailed accounts of violence against activists but often fail to address online threats. Rather than viewing TFV as a discrete phenomenon, it can be conceptualized as a continuum, with the online and offline realms being inextricably intertwined (Morales, 2023). The results illustrate that instances of violence in one context often serve to perpetuate violence in another. Given the importance of local context and external circumstances in understanding TFV (Dwyer, 2017) and considering the complexities of the Colombian situation (Morales, 2024), particularly in *La Guajira*, Figure 1 provides an overview of who perpetrates TFV against EHRDs, what forms of TFV are observed, and how it occurs.

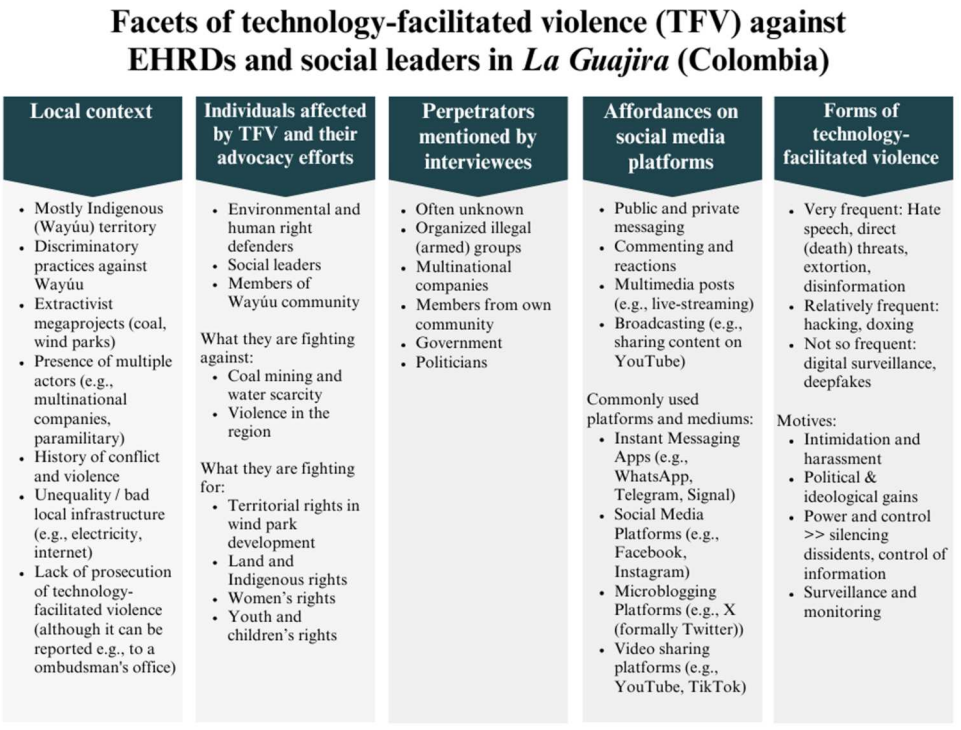

Figure 1. Facets of TFV against EHRDs and social leaders in *La Guajira,* Colombia. Source: Own depiction.

The findings, matching the Front Line Defenders report (2022), revealed that all interviewees considered ICTs important and relied on them, yet they were concurrently exposed to risks and experienced some type of TFV. While death threats and intimidation attempts signaled a readiness to silence EHRDs through physical violence (van der Borgh & Terwindt, 2012), hacking attempts, as well as other forms of TFV – including the spread of hate speech, disinformation, and photomontages – were aimed at further restrict their activism and instill fear. The frequent accounts of hate speech against Wayúu EHRDs, frequently imbued with racist and sexist content (I1;32), further align with Abbas et al. (2019) and demonstrate that the advent of SM has shifted longstanding racist prejudices around Indigenous activists to the digital realm. This highlights how the affordances of social platforms, including instant sharing and commenting under anonymity, have facilitated and even contributed to the normalization of TFV, echoing Jackson et al. (2021) and Peterson and Densley (2017).

These incidents coincide with the phenomenon of 'shrinking civic spaces' as they intend to undermine the leadership of EHRDs within their communities and harm their public image, as Sogge (2020) argues. Aligning with the observations by Jackson et al. (2021), who have noted a growing prevalence and normalization of political violence in the digital age, we find evidence of a similar normalization of TFV among most interviewees – likely shaped by Colombia's violent history. Given the pervasive violence in northern Colombia, TFV was not a primary concern for many individuals, as it was overshadowed by more immediate threats of physical violence and the struggle for

fundamental rights like land, education, and water. However, we emphasize the importance of increasing awareness about rising incidents of TFV and stress the need to recognize it as an equally important form of violence, integral to and not separate from other forms of direct violence. The empirical results indicate that a holistic understanding of violence requires an intersectional and context-sensitive approach to comprehend how power and domination operate in both physical and virtual spaces. In Colombia, particularly when working with Indigenous activists, an intersectional analysis is essential to understand the compounded layers of oppression they face, including the intersecting impacts of racialization, ethnicity, gender, and class. Indigenous activists are often targeted not only for their activism but also due to their cultural identity, gender, and social standing, making it critical to recognize these dimensions to fully address the violence they experience. To better understand the factors that influence the perpetration and experience of TFV, we propose an *activists' TFV analysis framework* (see Figure 2), encompassing five key facets (actors, forms and mechanisms, socio-political context, ICT-enabled activism, and consequences) that explores how activists perceive these

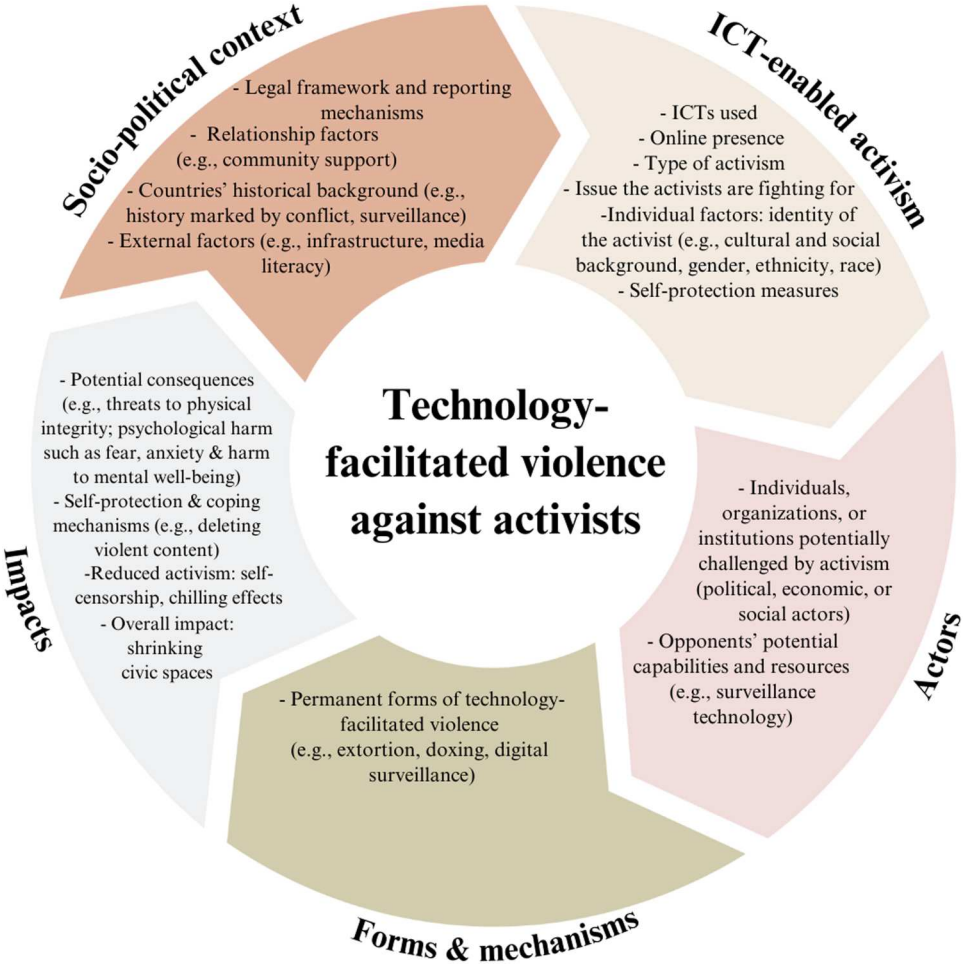

Figure 2. Activists' TFV analysis framework. Source: Own depiction.

threats in relation to their identities – including their gender, ethnicity, and cultural or social background – as well as the potential threats posed by individuals, organizations, or institutions whose political, economic, or social power may be challenged by activism. It also considers the capabilities and resources that opponents may use to perpetrate TFV and emphasizes how the socio-political context and the self-protection strategies adopted by activists shape their exposure to and experience of TFV. We have focused more broadly on activists than on EHRDs since we believe that the framework should extend beyond just understanding TFV against EHRDs. Building on our findings (illustrated in Figure 1), this framework highlights the key facets from our case study that contribute to understanding TFV. It serves as an initial inspiration to capturing TFV within the holistic understanding of everyday violence faced by activists, while also identifying opportunities for policy measures, awareness-raising, and IT security training. Enhancing context-sensitive IT security training and digital literacy programs that address the specific needs of the target audience, respecting their values, goals, and ways of using technology, can promote secure online behaviors, improve protection mechanisms, and potentially reduce risks of TFV. It is important to acknowledge that digital education without critical reflection can become an extension of TFV, reinforcing inequalities by ignoring local struggles, knowledge systems, and lived realities. Thus, digital literacy programs should reflect on how digital systems shape power and support individuals to navigate, resist, or transform those systems in ways meaningful for their context. In our case, collaborating with activists and their communities can help to ensure the programs are relevant, sustainable, and locally embedded.

The prevalence of TFV and its intersection with physical violence, as targeted attacks facilitated by location tracking through surveillance or real-time status updates (including pictures of residence) on platforms like WhatsApp, underscores the need for effective online conduct strategies. A holistic approach to security, including financial resources, time, training, and education is essential to address deficiencies in how EHRDs safeguard themselves. In addition, interviewees highlighted the impact of infrastructure deficiencies in their territories, including high digital illiteracy rates and limited access to protective capacity-building resources.

In line with Schoenebeck et al. (2023) and Morales (2023), these political, social, and technical factors are crucial for understanding the disproportionate risks EHRDs encounter in their activism. This underscores the importance of policymaking that promotes a safer online environment, fostering constructive discourse interactions. Without such regulations, TFV may intensify, shrinking civic spaces, curtailing rights and freedoms, and increasing the risk of spilling over into the physical realm. Similarly, it highlights the responsibility of state institutions to adapt economic policies, like the current energy transition agenda, to local realities to prevent violence – an essential step for advancing long-term sustainable peace in Colombia (Morales, 2023) and addressing power imbalances and economic dominance over these territories. In our case study in *La Guajira*, this begins by tackling structural inequalities reflected in the region's connectivity issues. Our study has shown that the reliance on normal, unencrypted phone calls renders EHRDs more vulnerable to security risks than individuals using encrypted services, which require adequate internet connectivity. Additionally, poor connectivity has limited EHRD's ability to obtain and share information, and, as most cases revealed, this resulted in lower visibility in SM. The limited access to ICTs and the resulting inadequate

participation in online discourse significantly hindered Wayúu EHRDs from voicing their concerns. Colombia's lack of legal frameworks on TFV, combined with impunity and the challenges of anonymity, may also explain why several EHRDs choose not to report these cases. In contrast, they have developed their own strategies to cope with TFV and the emotional distress and fear that it causes (I24;31). Despite this, many have emphasized their tireless commitment to continue fighting for their rights.

Our research reveals the pressing necessity to address the often-overlooked digital dimension of structural violence encountered by marginalized communities in Colombia. It also aims to encourage stronger collaboration between academia and NGOs in this field to provide context-aware digital security training and raise awareness about TFV and security. Such efforts could catalyze further collective actions to resist and combat TFV. Furthermore, SM platforms and applications and their providers are to be held responsible for ensuring a secure online environment to ease the self-protection burden on EHRDs. This, for example, enhances mechanisms to timely identify, report, and delete violent content and potentially block the respective accounts, as Abbas et al. (2019), Lawlor (2021), and Schoenebeck et al. (2023) suggest. While more secure digital platforms can partly mitigate the immediate impact of this violence, they do not provide a permanent solution.

6. Conclusion and limitations

The concept of TFV can be elucidated through a sociotechnical lens, whereby the diverse theoretical concepts of violence are considered, and the rather conventional understanding of physical violence is extended. It is erroneous to view TFV as a discrete phenomenon; rather, it represents a continuation of the existing forms of violence that activists are subjected to. This study demonstrates that violence must be understood in its complexity, as it manifests in many interrelated forms, including physical, psychological, structural, and, increasingly, digital. Failing to consider these aspects represents a significant omission in any analysis of contemporary oppression with which EHRDs and, more generally, activists are confronted, given the evolving nature of this phenomenon. As illustrated, the nature of digital threats is often dispersed across platforms, hidden behind anonymous accounts, or obscured by complex technical mechanisms like deepfake technologies.

In future research, an examination of the extent to which TFV is experienced by EHRDs in other regions, particularly in contexts where extractive agendas intersect with local interests and human rights, could contribute to a more nuanced understanding of the manifestations, patterns, and impacts of TFV in comparative terms. Thereby, a deeper intersectional analysis would be helpful to understand the diverse forms of violence faced by EHRDs. It helps reveal how factors like gender, race, ethnicity, and class intersect, highlighting the unique challenges of different activist groups and informing more targeted and effective responses.

Notes

1. The term EHRDs has gained international recognition through NGOs and the UN. It is largely defined as individuals or groups protecting communities, ecosystems, and land against threats like unsustainable resource extraction, pollution, and dispossession, often opposing extractive industries and large infrastructure projects. However, the relevance

and adoption of this term varies depending on the context (Verweijen et al., 2021). In Colombia, 'environmental leaders' (*líderes ambientales*) are often associated with 'social leaders' (*líderes sociales*), who engage in intersectional activism and advocate for various causes simultaneously.

2. In this context, wind energy projects are critiqued for dispossessing Indigenous territories in the name of climate change solutions, fragmenting ancestral lands, affecting local livelihoods and territorial governance (Ulloa, 2023).
3. Neo-paramilitary groups, evolved from earlier paramilitaries, control local governance and resources through corruption and violence. In *La Guajira*, they systematically use local government collaboration and violence to co-opt public resources (Amaya, 2024).
4. 'I' refers to the interviewee, and the number indicates the respective interview.

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Appendix

The table shows an excerpt of the coding scheme, including core categories (level 1), sub-categories (level 2), and codes (level 3), accompanied by illustrative testimonies from interviewees.

Core category (level 1)	Sub-category (level 2)	Code(s) (level 3)	Example
Digital realm	Activism	e.g., art-supported activism, *alerta machitrol*, podcasts, awareness raising, attention gathering …	For attention gathering: '*Basically, when it comes to social media, we haven't managed it in the best way, but we've tried to use it to raise our voices and be heard, so that someone listens to us and helps address some of our needs.' (I26)*

(*Continued*)

Continued.

Core category (level 1)	Sub-category (level 2)	Code(s) (level 3)	Example
	Commonly used ICTs/ applications	e.g., WhatsApp, WhatsApp plus, Facebook (messenger), Facebook Lite, Telegram, Waze, Instagram, Tik Tok, Snapchat, Google Meet, Zoom, Google Maps, Twitter/X, Grinder, Briar, Bluetooth, radio, Hotmail, Signal, SMS, Telegram, YouTube, Free Bacis	Example for WhatsApp and Free Basics: *'At first, the mobile plans offered by providers include WhatsApp usage, but nothing else on the internet is free – even though it's essential.' (I6)*
	Forms of TFV	e.g., extortion, memes, deep fakes, information theft, insults, photo montages, defamation, unauthorized pornography, cyber bullying, being blocked on social media, scam calls, device inspection, hacking, hacking attempt, hate speech, digital intimidation, assumption of surveillance	For cyber bullying and fear of being hacked: *'[…] I discovered that a troll account had started posting personal photos of me and my family in Facebook groups, violating my personal information and posting sexist, threatening, and defamatory comments. I had never shared those photos on social media, which makes me fear that my phone has been hacked.' (I14)*
	Consequences of TFV	e.g., did not leave territory for a while, unsure what to do, self-censorship, not active on social media anymore, self-care, no trust in ICTs, digital security protocols, support group, on alert, deletion of Facebook, chilling effect, emotional distress, less active	For self-censorship: *'As I was telling you, here in Colombia one also takes care not to point fingers and say 'it comes from such and such a place' unless there is proof. And I'm quite careful about that, […]' (I28)*
Physical realm	Wayúu communities	e.g., lack of infrastructure, facing difficulties going to university, importance of speaking Wayuunaiki, affected by stereotypes, victimization, importance of own culture, affected by climate change, spiritual, protection of own community, defending own land, own knowledge production, incidents of child abuse, affected by armed conflict, colonial history, resistance, internal conflicts, etc.	For affected by armed conflict: '*Community councils have been making claims for 20 or 30 years. And when you bring that to light, in a way you reveal the conflict and maybe elevate the discussion to another level.' (I36).*
	Forms of violence	e.g., insults, surveillance, intimidation, pamphlets, killings, attacks, GBV, child abuse	For attacks: '*We have been the target of systematic persecution – through death threats, attacks, defamation, false accusations – and precisely because of the work we do: defending human rights […]'*
	Physical security	e.g., bodyguards, having fence at own house, publicly known, safety protocols, psychological support, self-care, sending location to others	For self-care: '*And with them, we also did everything, like breathing exercises, as a starting point for self-care, an emergency plan, and routes to follow in case of threats. Security was always at the center of the discussion. […]' (I28)*
Contextual factors	Social structures	e.g., racism, sexism, poverty, insecurity, impunity, corruption, (forced) displacement, political violence, police violence, drug traffic, patriarchal structures, polarization, peace agreement	For sexism: '*[…]violence doesn't play out the same way in every place. It's also very different when the threat is directed at a man or a woman. For women, there's more sexual content, more targeting of their family space, threats that extend to other family members, like their children. For men, the threat is aimed more directly at the individual.'*

(*Continued*)

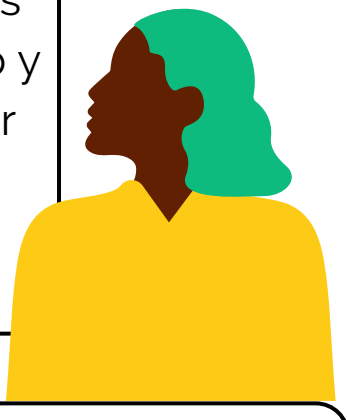
Continued.

Core category (level 1)	Sub-category (level 2)	Code(s) (level 3)	Example
	Environmental damage	e.g., coal, wind parks, plastic, water scarcity, lack of food, diseases, contaminated land	For contaminated land: '*The thing is, we don't have water, we don't have land – the land is completely contaminated. […] All those things we used to plant at home, things we barely survived on – we can't do that anymore. And that's why there is such extreme poverty in my municipality.' (I27)*

Below is a summary of the paper and contact information for further assistance, should Colombian activists be subjected to technology-facilitated violence

Violencias digitales contra defensorxs del medio ambiente y derechos humanos en La Guajira, Colombia

Líderes y lideresas sociales y defensorxs de derechos humanos – especialmente de las comunidades indígenas Wayúu – utilizan herramientas digitales como WhatsApp y Facebook para organizarse, denunciar abusos y visibilizar sus luchas. Sin embargo, estas mismas herramientas lxs exponen a serias amenazas digitales.



Formas de violencia digital:

Las **amenazas digitales** son comunes y muy diversas
Los tipos de violencia digital más frecuentes incluyen:

- Amenazas de muerte e intimidación por redes sociales, llamadas o perfiles falsos
- Discurso de odio con contenido racista, sexista o clasista
- Campañas de desinformación para desacreditar su trabajo
- Hackeos a cuentas personales (correo, redes)
- Suplantación de identidad y manipulación de fotos (como deepfakes)
- Doxing (difusión de datos personales) y extorsión
- Vigilancia digital constante, real o percibida
- Sabotaje de infraestructura de internet en zonas rurales

¿Quiénes están detrás?

Frecuentemente la violencia digital está ejecutada desde perfiles falsos o números desconocidos, lo que dificulta su denuncia y seguimiento. Se sospecha de empresas multinacionales, actores armados ilegales, funcionarios estatales, e incluso de otras personas de la comunidad

Violencias digitales contra defensorxs del medio ambiente y derechos humanos en La Guajira, Colombia

Consecuencias:

- Miedo, autocensura y aislamiento
- Silenciamiento colectivo, cuando incluso las comunidades dejan de hablar por temor a represalias, especialmente cuando también se amenaza a sus familias
- Afectaciones emocionales persistentes
- Desigualdad digital, al limitar su acceso seguro a tecnologías básicas
- Normalización de la violencia digital, la cual invisibiliza su gravedad y reduce la búsqueda de protección o denuncia

¿Qué se puede hacer?

- Fortalecer la seguridad digital comunitaria con talleres prácticos en lenguas locales
- Ofrecer apoyo psicosocial para afrontar el impacto emocional de la violencia digital
- Desarrollar materiales educativos adaptados al contexto territorial y cultural
- Capacitar sobre un uso más seguro de aplicaciones comunes como WhatsApp y Facebook
- Exigir responsabilidades a plataformas digitales y al Estado frente a estas agresiones
- Reconocer legalmente la violencia digital como una amenaza real para los derechos humanos

¿A quién se puede contactar?

- Fundación Karisma: https://web.karisma.org.co/
- AccessNow línea de ayuda: https://www.accessnow.org/help-es/
- Colnodo: https://colnodo.apc.org/
- Linterna Verde: https://www.linternaverde.org/contacto