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Contribution of Information Communication Technology to the Prevention and Responsive to Gender Based Violence among Women and Children

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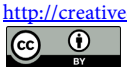

Abstract

This is an abstract to examine the literature reviews on the ability of ICT (Information Communication Technology)-based interventions to prevention and responsiveness of GBV (Gender Based Violence) amongst women and children. In recent years, the proliferation of Information and Communication Technology (ICT) offers novel avenues for addressing GBV and promoting gender equality. The primary objective of the study was to tackle the question of the indication of the use of information and communications technologies (ICT) in preventing and responding to gender-based violence (GBV) against women and children. The findings of the study stated that the contribution of ICT in the prevention of GBV amongst women and girls as well as boys is an obligation to increase the response rate. Research gaps are wider due to oppression that arises from factors of political, cultural, economic, and social that oppress women and girls to assess ICT in order to air their voices in the prevention of GBV.

Keywords

Prevention, Responsiveness, GBV, ICT, Intervention, Gender Equality

1. Introduction

Gender-based violence (GBV) stands as a dark stain on societies around the world, causing profound physical, psychological, and emotional suffering for its victims. This form of violence, which encompasses actions of abuses from physical, sexual, psychological, mental, and emotional based on gender differences, disproportion-

ately affects women and children, reflecting deeply ingrained societal inequalities and power dynamics. The impacts of GBV are broad, reaching almost all survivors but also the broader community and future generations.

Addressing the pervasive issue of GBV is a very important step forward which does arise from authoritative values towards social justice and gender equality. GBV perpetuates harmful stereotypes, stifles the encouragement of empowerment of women and girls, and restricts their access to education, socio-economic opportunities, and also in public life. By failing to take decisive action against GBV, societies risk perpetuating cycles of violence, inequality, and injustice.

In this context, the potential of Information and Communication Technology (ICT) emerges by way of a beacon through hope besides opportunity. ICT, encompassing mobile phones, internet platforms, social media, and other digital tools, has demonstrated its capacity to transcend geographical barriers and transform various aspects of our lives. With its wide-reaching impact, ICT holds the promise of being a powerful force in the fight against GBV.

The acquisition of data on gender-based violence, in particular, has been vital in putting this issue in the middle of the efforts for gender equality. World Health Organization (WHO), and the United States Agency for International Development (USAID), countries have significantly scaled up efforts to collect data on violence against women. It has been indicated that in 2010 only 82 countries had survey data available on gender-based violence that number has risen to 161 (WHO, 2022). As a rapid study on technology-facilitated Gender-Based-Violence (TFGBV) in higher learning institutions by UNFPA (April, 2024) indicated that nearly 90% of young adults enrolled in Nairobi's tertiary institutions have witnessed technology-facilitated gender-based violence, with 39% having experienced it personally. While online violence has an extensive reach, the study showed that female students are disproportionately impacted.

The intersection of ICT and GBV presents both challenges and opportunities. As societies increasingly adopt ICT, the potential to harness its capabilities for GBV prevention, intervention, and response becomes increasingly evident. Online platforms can serve as spaces for raising awareness, providing information, and connecting survivors with essential resources. The anonymity and privacy offered by digital spaces can empower survivors to seek help and report incidents without fear of stigma or retribution.

This paper investigates the intricate relationship between ICT and the prevention of GBV among women and children, with a specific focus taking place in low-middle-income class countries in 10 years period of 2014 to 2024. By analyzing existing research, case studies, and practical implementations, this paper seeks to explore the potential of ICT to address GBV in societies that often grapple with resource constraints and unique challenges. Through a comprehensive review of the literature and evidence, we aim to uncover the effectiveness of ICT-based strategies, while also acknowledging the complexities and limitations inherent in their implementation.

We exclude the uses of ICT if they are not specifically and purposefully used to deliver or fill gaps in prevention and response interventions for SGBV. We exclude uses of ICT if they are not linked specifically to some aspect of gender. We include literature that studies the intended consequences of ICT interventions.

As we navigate this exploration, our primary goal is to shed light on the essential part of ICT can perform in alleviating the burden in GBV and fostering gender equality. As, globally, 85% of women reported witnessing digital violence, and nearly 40% have experienced it personally. Like in Yvonne and Faith's case, digital violence and online abuse are typically highly sexualized and take many forms including cyberbullying, cyber flashing, doxxing, hate speech, and non-consensual use of images and video, such as deepfakes. People are targeted with slurs, and in some cases, their images are subjected to demeaning non-consensual sexual acts (UNFPA, 2023).

By understanding the opportunities and challenges that lie at this intersection, we can pave the way for more targeted interventions and informed policies. Ultimately, this paper strives to contribute to the discourse surrounding GBV prevention, offering insights that may shape effective responses in the pursuit of safer and more equitable societies.

Problems and Issues of Universal Gender-Based Violence

Globally the problem that arose amongst women and children on gender-based violence regardless of gender, is particularly relevant in lower- and middle-income countries (LMIC), whereby socio-economic and political upheavals are more serious in these countries. Additionally, occurrences of violence against women (whether in partner relationships or friendly partners or enacted by associated partners), are likely to be more inclined or are advanced in LMIC (World Health Organization, 2013). Notwithstanding the high prevalence rate, there is comparatively less investment in GBV research in LMIC in relation to higher-income countries (Coll et al., 2020).

245 million women aged 15 and above have experienced intimate partner violence in the last 12 months alone (WHO, 2022). These estimates are huge, yet the correct figures are most expected to be even greater because of the difficulties women face in being transparent about experiences of violence. Evidence shows that violence from an intimate partner can often go unrecorded, due to social stigma and women not wanting to make things worse for themselves (WHO, 2022). This shows negative and unintended consequences of women access to ICT due to social stigma that does not allow women raising their voice in such circumstances. This leads to insufficient data whether online or offline to ICT on GBV among women and children in LMIC.

Women in every single country where data were collected have come across IPV in the last year. The two regions with the highest-known prevalence of IPV are **Sub-Saharan Africa**, where **33%** of women aged 15 - 49 years have suffered IPV in their lifetime and **20%** in the last year alone, and **South Asia**, where **35%**

of women in the same age bracket have experienced it in their lifetime and **19%** in the last year (WHO, 2022).

GBV is a global phenomenon. It takes place in various systems, and situations that include IPV (by sexual, physical, and emotional abuse); conflict-related to sexual violence; trafficking; forced and early marriage; female genital mutilation; homophobia and transphobia; and sexual harassment and abuse. These various demonstrations of violence are brought together by different acts that are related to socially assigned gender differences amongst males and females, usually abusing individuals and power imbalances amongst the genders (Katuli, 2010: p. 153). GBV is a reply to a seeming danger of the socially and culturally constructed gender roles, responsibilities, and norms of societies.

Gender-based violence takes many forms: physical, sexual, emotional, and psychological. Examples include female genital mutilation, killing in the name of so-called "honor", murder, forced and early marriage, and sex trafficking. Two of the most prevalent types of violence that women experience are intimate partner violence (IPV) and non-partner sexual violence (NPSV). Just like gender-based violence that occurs offline, digital violence is devastating to those who experience it. Nine out of ten women report online violence harms their sense of well-being, and over a third have experienced mental health issues due to online violence. Hence, this study needs to highlight specific measures to eliminate or reduce gender based violence among women and girls (UNFPA, 2023).

Most of the measurement on Evaluation, that preserves an GBV main international database, mentions that "international studies and survey data approve that GBV is an extensive problem of serious consequences in relation to individual grief, sorrow, health problems, incapacity, that give rise to death for women, children, and men. As well as, the high cost for healthcare systems and society as well. Additionally, it increases the significant costs of health care systems in society". (USAID & PEPFAR, 2020). Shock which derives from GBV establishes the deeply frequently incalculable significances. In a study of 2013, indicated that women who have physical and/or sexual IPV incidences "reported higher rates of depression, had an abortion, acquired HIV, and alcohol use compared to women who had not" (World Health Organization, 2013).

Although a limited number of authorities, challenge the assessment which identifies penalties of the GBV. Some of the studies and systematic reviews that outline the effectiveness of interventions and approaches geared towards reducing IPV, for instance, have also been included in the GBV base of evidence (Michau et al., 2015). So far, the field is indicated by "research gaps in the study through research findings" that include "an inadequate knowledge on prevention and response on the acts of ferocity against women and girls; a partial understanding of the health, and other effects towards unfairness on available literature of high-income countries as well as the absence of data of violence from certain regions" (Temmerman, 2015).

The goal of GBV is to have complete data which is a reality. Country data that

are accessible shows that between 15% and 76% of women have been beleaguered by physical and/or sexual violence during their lifetime (World Health Organization, 2013). Worldwide data shows that almost 50% of girls under 16 years of age have been sexually assaulted (World Health Organization, 2013). Additionally, in 2002 the world data of GBV approximations that 150 million girls under 18 years of age had suffered from some form of sexual violence (UN Women, 2019). Femicide, or the deliberate of women being killed according to their gender, has increased universally. Meanwhile, in 2012, women who were killed rose by roughly 80% (United Nations Office on Drugs and Crime, 2019); with Africa and Latin America having the highest rates per 100,000 women inhabitants (3.1 and 1.6, respectively) (United Nations Office on Drugs and Crime, 2019). Other countries such as El Salvador (6.8 per 100 k females) and Honduras (5.1 per 100 k females), had even higher rates (United Nations Gender Equality Observatory for Latin America and the Caribbean, 2020). For example, countries such as Afghanistan, the Central African Republic, Colombia, the Democratic Republic of Congo, Iraq, Libya, Mali, Somalia, and Yemen, amongst others, all had witnessed significant GBV incidences associated with the armed conflicts occurring in their borders (United Nations Secretary-General, 2019). Moreover, boys are also defenseless to sexual violence, but reliable data on prevalence is lacking (Radford & Sommarin, 2014; UNICEF, 2014). However, data collected in the DRC indicated that the number of boys (in DRC) who had experienced conflict-related sexual violence ranges from 4% to 24% which depends upon the methodology that has been used (Casey et al., 2011; Duroch et al., 2011; Johnson, 2010; UNICEF, 2014). The 2020 Covid-19 pandemic also allowed for more GBV acts to take place whereby, in some countries, the increase of IPV increased alongside the government lockdowns and the stress from the loss of livelihoods and quarantines (Mlambo-Ngcuka, 2020).

2. Impacts of ICT in Ownership, Access, and Usage on GBV

United States Agency for International Development (USAID), Literature Reviews on the Impact of Information Communication Technology (ICT) with regard to Gender-Based Violence indicated that on the empowerment of girls and women, by addressing the question of, what is the impact of ICT ownership, access, and usage on GBV? Specifically, what is the relationship between online harassment of women and girls and offline sexual and physical violence among women and girls (Philbrick et al., 2021).

The protocol for the development of a Campbell Collaboration on the Evidence and Gaps Map (EGM) (Philbrick et al., 2021) confirms that ICT plays a role in online and offline occurrences of GBV. A literature review of the protocol identified several ways between ICT ownership, access, and usage and both online and offline harassment and the GBV. The literature review demonstrates: 1) ICTs may always enable offline GBV; 2) Offline GBV may be executed to increase admittance to ICTs for online GBV; 3) Online annoyance may provoke offline GBV.

The types of annoyance experienced online often follow the outline of offline abuse. These include abuses, unwelcome sexual advances, investigation, and intimidations of physical harm. Online abuse is definitely gendered, as feminine usernames are more likely to receive sexually overt or threatening messages. Information and Communication Technology (ICT) has emerged as a powerful tool for raising awareness about Gender-Based Violence (GBV) and promoting gender equality on a global scale. Through various digital platforms, ICT enables the dissemination of information, advocacy campaigns, and educational resources that address the root causes of GBV. These efforts challenge societal norms, stereotypes, and behaviors that perpetuate violence while empowering women and children to assert their rights and demand change. Information and communication technology (ICT), precisely the use of mobile phones, tablets, and web-based communications (laptops) to address numerous issues in LMIC, has increased at a larger scale in the past decade (UNESCO, 2020).

Mobile phones have transformed into ubiquitous devices with the potential to reach even remote and marginalized populations. Short message service (SMS) campaigns, voice messages, and mobile applications are employed to deliver educational content and helpline services, offering survivors and potential victims' direct access to support and information. The internet and social media platforms serve as dynamic spaces for engaging with a broader audience. Campaigns against GBV utilize multimedia content, videos, info graphics, and interactive forums to spread messages, challenge stereotypes, and foster public discourse. Online platforms also provide safe spaces for survivors to share their stories, thereby reducing the stigma associated with GBV. E-learning platforms enable the creation and dissemination of educational materials about GBV and gender equality. Interactive courses, webinars, and modules equip individuals with the knowledge and skills needed to identify, prevent, and answer GBV. These platforms empower users to become advocates for change within their communities. TÚ decides Program in Peru leverages mobile phone technology to engage young people in conversations about consent, gender equality, and healthy relationships. Interactive messages and quizzes challenge harmful beliefs and behaviors, also Digital Safeguarding Tool in Uganda enables community health workers in order to identify and respond to GBV cases using mobile phones. It allows for secure documentation, remote support, and timely referrals for survivors.

GBV, which is sometimes referred to as sexual gender-based violence (SGBV) means "any destructive act of sexual, physical, psychological, mental, and emotional abuse that is committed against a person's will and that is based on socially ascribed roles (i.e., gender roles) which are differences between males and females" United Nations Office for the Coordination of Humanitarian Affairs (United Nations Office for the Coordination of Humanitarian Affairs, 2019). Important is the Monitoring and Evaluation aspect in order to Assess and Use Results. Measure Evaluation is an institution that was awarded a cooperative agreement with the U.S. Agency for International Development (USAID) to the Caro-

lina Population Centre at the University of North Carolina at Chapel Hill and five partner organizations, that are: ICF International, John Snow Inc., Tulane University, and Management Sciences for Health, Palladium (MEASURE Evaluation, 2020). MEASURE Evaluation is an organization that works closely with USAID, whose country missions and counterparts are to improve the collection, analysis, and presentation of data to promote better use of data in planning, policy-making, managing, monitoring, and evaluating population, health, and nutrition programmes, and maintains the SGBV sub-area within its Family and Reproductive Health Indicators Database.

Global and regional estimates of sexual gender-based violence against women, that are prevalence and health effects of IPV and non-partner sexual violence are difficult to estimate with preciseness, due to a lack of transparency among violated women (Breiding et al., 2015). Physical, mental, and sexual abuse effects are linked with IPV include adolescent pregnancy, unintended pregnancy in general, miscarriage, stillbirth, intrauterine hemorrhage, nutritional deficiency, abdominal pain and other gastrointestinal problems, neurological disorders, chronic pain, disability, anxiety and post traumatic stress disorder (PTSD), as well as non-communicable diseases such as hypertension, cancer, and cardiovascular diseases (World Health Organization, 2013).

This trend towards ICT uptake in gender violence is especially true of young people with an average of 83% of those aged 18 - 29 who own a mobile phone (Ippoliti & L'Engle, 2017), citing Pew Research Center, 2014). The evidence is supported by methodologically rigorous research, on the impact of using ICT in areas such as health, which has indicated that if used properly, ICT can increase the impact of interventions and address gaps and challenges that are intrinsic to the delivery of interventions (World Bank Group, 2016). The World Bank estimates that the number of Internet users has tripled from 1 billion in 2005 to 3.2 billion at the end of 2015 (World Bank Group, 2016). In that report it has been indicated that "70% of the one-fifth of the population own a mobile phone" (World Bank Group, 2018). Hence, ICT interventions can facilitate strategies that are known to be effective for achieving certain outcomes, but face implementation challenges. For example, in the field of HIV, adherence to antiretroviral treatment is known as effective for treating HIV by reducing viral load, but the lack of oversight in ensuring patients regularly adhere to their prescribed regimens is a common obstacle.

The use of ICT for mobile phone reminders has been proven as an effective strategy to ensure that patients adhere to their appointed regimens (Lester et al., 2010, Mills & Lester, 2019). The World Health Organization recognized the need for an evidence base to support ICT use in order to increase in health areas such as maternal, newborn, child health, and HIV and AIDS, whilst in 2019, published a Guideline of recommendations on digital interventions, supported by a critical evaluation of evidence (World Health Organization, 2016). The Guideline identi-

fies the evidence gaps that informed member states to streamline including future research investment, which is supported by contributions from eleven Cochrane reviews (Cochrane Collaboration, 2019). Stakeholders working in the area of GBV, such as the Sexual Violence Research Initiative (SVRI) and the World Bank, have recognized and acknowledged the increased use of ICT to both prevent and respond to strategies for GBV in the world (Freeman et al., 2012, Hayes, 2014, Sexual Violence Research Initiative, 2017). As in many health areas, ICT is being used as a tool to facilitate interventions that are known to be effective in addressing BGV (for prevention and response) that has been outlined in globally accepted evidence-based frameworks for preventing and addressing violence (including by not limited to GBV) such as RESPECT (violence against women) (World Health Organization, 2016) and the INSPIRE (violence against children) (World Health Organization, 2016).

There are very few published studies on the use of ICT that are directly related to GBV, notably in LMIC, which are scarce. Nevertheless, there are recent several, but narrow systematic reviews that: 1) Provide an initial analysis and functional categorization of mobile phone applications addressing violence against women (Eisenhut et al., 2020); 2) Study web- and mobile-based delivery methods of IPV "victimization" prevention on SGBV (Anderson et al., 2019); 3) Examine the effect of eHealth interventions and compare with standard care on reducing IPV, depression, and posttraumatic stress disorder (PTSD) among women and children who were exposed to IPV (Linde et al., 2020); 4) Identify the effectiveness of ICT-based IPV interventions (El Morr & Layal, 2020), a dearth of available peer-reviewed published research exists. The majority of those studies that have been published, and that are readily available took place in higher-income countries. There have been few attempts to identify and systematically review the research on evidence of outcomes and impact attributable to using ICT specifically for GBV prevention or response in LMIC countries. While evidence has been emerging when examining the gender implications that are connected with the use of ICT including various benefits to women and girls, as well as children in general, increasing evidence has also raised concerns about the role of ICT in exacerbating GBV (Crabtree & Geara, 2018). There have been few attempts to identify and systematically review the research and evidence of outcomes and impact attributable to using ICT specifically for SGBV prevention and/or response in LMIC.

3. Contribution of Preventive and Responsiveness of ICT and Gender Based Violence in Africa

ICT interventions in prevention and responding to gender-based violence have indicated an increase in the global prevention and response of GBV, which include supporting and reporting services for survivors. According to Philbrick et al. (2021) study, GBV prevention and response interventions are typically delivered by civil society groups, governments, and NGOs that separates technology of partner by providing technical inputs. The most common ICT services are telephone

helplines, mobile applications and online platform solutions Whereby, Philbrick observed that ICT has been used to facilitate interventions that are known to be useful in addressing SGBV (Philbrick et al., 2021: p. 3) underline the need to incorporate the different ICT services into the wider context, i.e. connecting them with accessible institutions for more support (Eisenhut et al., 2020: p. 8). In this case, the use of helplines for victims of GBV of varying nature is a common feature in most countries' contexts, often with key features such as calls being toll-free, open every day and 24/7 to assure accessibility, offering advice, counselling and information, including referrals to other support services such as medical services, shelters, and legal services (Petrowski et al., 2021).

In the LMICs condition, a study based on a legal centre for victims of GBV in Morocco in 2009 showcases indicated how the ownership of a mobile phone helped some women reach out for help and report crimes, on occasion even replacing the family's role in reporting and giving direct access to authorities, and the benefit of internet access to connect with others in a similar situation; while others felt a significant limitation to using the mobile phone due to socio-economical, technical and cultural reasons (including illiteracy and additional restrictions), showcasing the two sides of the coin of interventions in this context (Buskens & Webb, 2009). A study on the increase of GBV in remote areas in Kenya during COVID-19 discussed how psychosocial services for victims of GBV were offered through a national hotline, other service providers' hotlines and online platforms funded by foreign donors to provide counselling. The study revealed that "while using technology and practical platforms has helped cover an essential service gap, many recognised that using technology has limited impact and cannot reach the most marginalised women and girls who often lack digital literacy or do not have access to technology" (Neetu et al., 2021: p. 66), that lead to the need of some organizations to focus on educating community health volunteers than to support women and girls in the communities; observing that many were comfortable with one-on-one counselling and whilst some were not having access to phones (Philbrick et al., 2021). With this said, it is worth mentioning that research on the use of ICTs to support victims and tackle GBV in LMICs contexts is limited, with a lack of peer-reviewed studies on the use of ICTs for GBV prevention/response in these contexts – including studies of the sustainability and efficacy of such interventions. While there are some studies conducted in high-income countries, the studies in LMICs are very limited (Philbrick et al., 2021). It should be mentioned that ICTs, in addition to their benefits, have created additional room for GBV through online abuse and new forms of violence, thus functioning also as an instrument for increasing GBV (Philbrick et al., 2021).

Another study discusses the increase in female genital mutilation/cutting (here on after FGM/C) and forced and early marriages of girls due to lockdown measures, school closures and the redirection of sexual and reproductive health funds into funds to embark upon the pandemic (Mubaiwa et al., 2022). An interesting note is the cause of GBV during earlier public health crises in the region;

whilst during the pandemics of Ebola and Zika created similar trends in Africa with restrictions, economic hardships, and not making priorities of SRH services increasing inequalities and leading to increases in GBV and unintentional pregnancies, with bigger socioeconomic inequalities putting the most vulnerable groups at most risk of violence (Onyango et al., 2019). Meinhart et al. (2021) likewise note that disease outbreaks, epidemics, and pandemics are not gender neutral and that GBV and infectious disease equally strengthen each other, and the need for policymakers to plan gender-responsive pandemic plans (Meinhart et al., 2021). Certainly, in times of infectious disease control measures, social isolation and separation practices, there are increased risks of violence against women, abuse, exploitation and neglect. In this regard, the use of ICT services across the country, Geldof (2011), conducted a study on the use of ICTs by youth in Ethiopia and Malawi, notes that most of the Ethiopian population lives in rural areas, and that "Ethiopia has one of the lowest telecommunication dispersion rates in Africa, particularly in terms of mobile phone subscribers" (Geldof, 2011: p. 71). She discusses six gender-based constraints to women's use of ICTs, and they are: literacy and education, language, domestic responsibilities and, time, on geographical location of facilities, content, and sociocultural norms. Amongst many factors, she observed the limitation of network connection, mostly in disadvantageous rural areas, noting that the ICT use agglomerated more around places where a power grid, as well as the necessary broadcast and communication networks, that were available; in other words, more communication networks were available in urban than in rural areas (Geldof, 2011: p. 72) and rural areas with a better connection. Her research finds that rural women were the most disadvantaged in terms of ICTs, and urban men the most advantaged, and that women and girls' use of new ICTs in rural research contexts the findings often carried a social stigma (Geldof, 2011: p. 75).

International and National Measures in GBV Alleviation

Good instruments have been designed at International and National levels as a measure of alleviating GBV in the world. The instruments comprise the following: the UN Declaration on the Elimination of Violence Against Women, 1993, the United Nations Convention on the Elimination of all Forms of Discrimination against Women (CEDAW) 1979, Beijing Declaration and Platform for Action 1995, The African Union (AU) Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa (Maputo Protocol) 2003, and SADC Protocol on Gender and Development, 1979.

4. Interventions

Interventions involve a wider opportunity taking into reflection the complex nature of GBV in general. However, the intervention of ICT, may not be one of the GBV interventions, but its method of delivery in the intervention to the end user (i.e., IPV clinical screening tools that are tablet rather than paper-based) may be

a useful method in GBV. But its method of delivery to the end Modes of ICT includes mobile phones, tablets, and web-based applications using laptop computers. The study included ICT interventions for the prevention of GBV against women and children, as a way of responding to GBV by improving survivors' access to ICT services and preventing the occurrence of GBV. The study excluded prevention and response interventions in addressing violence that are not related to socially ascribed gender differences between males and females. For instance, excluded literature that discussed violence related to the disciplining of children. The study also included the use of ICT in achieving intermediate results that are part of causal pathways for: 1) Prevention of GBV among women and children in LMIC; 2) Responding to GBV by improving the rate of survivors' access to services.

These intermediate results include those connected with evidence-based interventions that are contributing to the prevention of GBV under the RESPECT and INSPIRE frameworks. But excluded the uses of ICT if they are not specifically and purposefully used to deliver or fill gaps in prevention and response interventions for GBV. The study excludes uses of ICT if they are not linked specifically to some aspect of gender. It included literature that studies the unintended consequences of ICT interventions. The study also identified ICT-supported interventions that have as an objective either 1) GBV prevention; and/or GBV response (improved access for GBV survivors to services) or 2) an intermediate outcome that is the portion of the indication that is based on arranged way to also GBV prevention or better admission for GBV stayers to services (with position to the RESPECT and INSPIRE frameworks). These intermediate outcome areas are connected with the root causes of GBV based on established global evidence. We will try to classify studies connected to interventions if they are carried out by using ICT, and define the role of ICT in enabling the distribution of the intervention. These studies may relate to cohorts by using ICT interventions with no technology interventions, or with no intervention at all.

Important Interventions

Interventions on online GBV should include education and awareness. Civil society interventions may include working across service providers to strengthen support networks for victims. Advocacy may shed light on the impact of ICT-facilitated GBV in the online and offline lives of survivors, and foster culture changes towards rejecting GBV activities. Also, interventions that are based, that might embrace anti-spyware tools and designs that might support victims who can control the devices and keep accounts. Globally, legal systems are not equipped to respond to cases in which ICTs facilitate GBV. This is due to the fact that online harassment has not been determined as a criminal case, and it has not been adequately investigated at the country level, legislation related to violence against women must be updated to include digital harms, as well as related offline abuse.

What are information communication technologies (ICTs)? The use of ICTs,

particularly as "leapfrog" technology to achieve development targets, is increasingly ubiquitous. Access to 21st-century ICTs such as computers, the Internet, mobile phones, and tablets is increasing for individuals worldwide, including in LMICs. This literature review includes three broad categories of ICTs: devices, telecommunication and cellular networks, and networking technologies such as the Internet. Of particular relevance to GBV prevention and response, ICTs can also be classified along a spectrum of the victim's engagement: direct (e.g., messaging), indirect (e.g., public information used by a perpetrator), or no engagement (e.g., spyware).

5. Recommendations

We recommend that Technology-facilitated GBV requires cross-sector collaboration to design and implement effective practice, policy, and legal responses. While limited evidence suggests many individuals experience online GBV may lead to offline GBV, data needed for understanding the etiology of these phenomena are insufficient. There is a need to regulate the measurement of GBV, including the development of indicators for proper scrutiny, which is underway. Methods for measuring ICT-facilitated GBV are also necessary for evaluating the efficacy of interventions. Prevention efforts should begin during the design phase of ICTs, particularly for digital tools that may have dual uses and they should include perspectives of GBV-affected populations. Ongoing assessments of the potential uses of ICTs for abuse are needed in the context of rapidly evolving technologies and in consideration of the potential to combine technologies for new uses. Private, public, and non-profit actors can work together to mitigate the use of ICTs for perpetrating GBV. Interventions may comprise digital tools, online and offline services, and campaigns to shift social norms related to GBV.

Recommendations for the following:

FOR CIVIL SOCIETY. There is a need to do the following:

1) Identify cultural and social practices that normalize and/or perpetuate GBV.

2) Strengthen support for GBV survivors by networking service providers.

3) Raise awareness about the harms of online and offline GBV.

FOR TECHNOLOGY-BASED INTERVENTIONS. The following needs to be done:

1) Incorporate GBV prevention into ICT development.

2) Design anti-spyware that is effective in identifying dual-use apps.

3) Adapt online social networks to respond to the dynamics of real-world relationships.

4) Support the rights of survivors by ensuring data agency, redress, and rectification.

5) Provide technical support for digital safety training services.

FOR THE LEGAL SECTOR:

1) Introduce legislation to effectively respond to online GBV.

2) Include online GBV in protection orders for offline abuse.

3) Develop international legal frameworks to prevent and address online and online-facilitated GBV.

FOR RESEARCHERS AND PRACTITIONERS:

1) Address the evidence gap in knowledge of the relationship between ICTs and GBV, particularly at the population level.

2) Design standards for data collection relevant to ICTs and GBV, including distinguishing online and offline GBV.

3) Rigorously evaluate interventions for ICT-facilitated GBV.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

Anderson, E. J., Krause, K. C., Meyer Krause, C., Welter, A., McClelland, D. J., Garcia, D. O. et al. (2019). Web-Based and mHealth Interventions for Intimate Partner Violence Victimization Prevention: A Systematic Review. *Trauma, Violence, & Abuse, 22,* 870-884. https://doi.org/10.1177/1524838019888889

Breiding, M. J., Basile, K. C., Smith, S. G., Black, M, C, & Mahendra, R. R. (2015). *Intimate Partner Violence Surveillance: Uniform Definitions and Recommended Data Elements, Version 2.0.* National Centre for Injury Prevention and Control Centres for Diseases Control and Prevention.

Buskens, I., & Webb, A. (2009). *African Women and ICT: Investigating Technology Gender and Empowerment.* IDRC Zed Books Ltd.

Casey, S. E., Gallagher, M. C., Makanda, B. R., Meyers, J. L., Vinas, M. C., & Austin, J. (2011). Care-Seeking Behavior by Survivors of Sexual Assault in the Democratic Republic of the Congo. *American Journal of Public Health, 101,* 1054-1055. https://doi.org/10.2105/ajph.2010.300045

Cochrane Collaboration (2019). *Eleven Cochrane Reviews Information: A World Health Organization Guidelines in Digital Health Care.* Cochrane Collaboration.

Coll, C. V. N., Ewerling, F., García-Moreno, C., Hellwig, F., & Barros, A. J. D. (2020). Intimate Partner Violence in 46 Low-Income and Middle-Income Countries: An Appraisal of the Most Vulnerable Groups of Women Using National Health Surveys. *BMJ Global Health, 5,* e002208. https://doi.org/10.1136/bmjgh-2019-002208

Crabtree, K., & Geara, P. (2018). Safety Planning for Technology: Displaced Women and Girls' Interactions with Information and Communication Technology in Lebanon and Harm Reduction Considerations for Humanitarian Settings. *Journal of International Humanitarian Action, 3,* Article No. 3. https://doi.org/10.1186/s41018-018-0031-x

Duroch, F., McRae, M., & Grais, R. F. (2011). Description and Consequences of Sexual Violence in Ituri Province, Democratic Republic of Congo. *BMC International Health and Human Rights, 11,* Article No. 5. https://doi.org/10.1186/1472-698x-11-5

Eisenhut, K., Sauerborn, E., García-Moreno, C., & Wild, V. (2020). Mobile Applications Addressing Violence against Women: A Systematic Review. *BMJ Global Health, 5,* e001954. https://doi.org/10.1136/bmjgh-2019-001954

El Morr, C., & Layal, M. (2020). *Violence against Women. The UN Convention on the Elimination of all Forms of Discrimination against Women.* Oxford University Press.

Freeman, M. A., Chinken, C., & Rudolf, B. (2012). *Violence against Women. The UN Con-*

vention on the Elimination of All Forms of Discrimination against Women. Oxford University Press.

Geldof, M. (2011). Earphones Are Not for Women: Gendered ICT Use among Youths in Ethiopia and Malawi. *Information Technologies & International Development, 7,* 69-80.

Hayes, C. (2014). *Tackling Gender-Based Violence with Technology: Case Studies of Mobile and Internet Technology Interventions in Developing Countries.* STATT.

Ippoliti, N. B., & L'Engle, K. (2017). Meet Us on the Phone: Mobile Phone Programs for Adolescent Sexual and Reproductive Health in Low-To-Middle Income Countries. *Reproductive Health, 14,* Article No. 11. https://doi.org/10.1186/s12978-016-0276-z

Johnson, K. (2010). Association of Sexual Violence and Human Rights Violations with Physical and Mental Health in Territories of the Eastern Democratic Republic of the Congo. *JAMA, 304,* 553-562. https://doi.org/10.1001/jama.2010.1086

Katuli, F. K. (2010). *Towards Understanding of Gender Relations and HIV/AIDS Prevention Strategies among Youth in Kinondoni Municipality in Dar es Salaam Region, Tanzania.* Ph.D. Thesis, Open University of Tanzania.

Lester, R. T., Ritvo, P., Mills, E. J., Kariri, A., Karanja, S., Chung, M. H. et al. (2010). Effects of a Mobile Phone Short Message Service on Antiretroviral Treatment Adherence in Kenya (Weltel Kenya1): A Randomised Trial. *The Lancet, 376,* 1838-1845. https://doi.org/10.1016/s0140-6736(10)61997-6

Linde, D. S., Bakiewicz, A., Normann, A. K., Hansen, N. B., Lundh, A., & Rasch, V. (2020). Intimate Partner Violence and Electronic Health Interventions: Systematic Review and Meta-Analysis of Randomized Trials. *Journal of Medical Internet Research, 22,* e22361. https://doi.org/10.2196/22361

MEASURE Evaluation (2020). *Sexual and Gender-Based Violence.*

Meinhart, M., Vahedi, L., Carter, S. E., Poulton, C., Mwanze Palaku, P., & Stark, L. (2021). Gender-based Violence and Infectious Disease in Humanitarian Settings: Lessons Learned from Ebola, Zika, and COVID-19 to Inform Syndemic Policy Making. *Conflict and Health, 15,* Article No. 84. https://doi.org/10.1186/s13031-021-00419-9

Michau, L., Horn, J., Bank, A., Dutt, M., & Zimmerman, C. (2015). Prevention of Violence against Women and Girls: Lessons from Practice. *The Lancet, 385,* 1672-1684. https://doi.org/10.1016/s0140-6736(14)61797-9

Mills, E. J., & Lester, R. T. (2019). Mobile Phone-Enabled Adherence in HIV/AIDs. *The Lancet Digital Health, 1,* e4-e5. https://doi.org/10.1016/s2589-7500(19)30008-1

Mlambo-Ngcuka, P. (2020). *Violence against Women and Girls: The Shadow Pandemic.* UN Women.

Mubaiwa, N. et al. (2022). *Introducing an Ethics Framework for Health Priority-Setting in South Africa on the Path to Universal Health Coverage SAVE-UHC (South African Values and Ethics for Universal Health Coverage).* Working Group and Research Team.

Neetu, I., Meshram, P., & Ray, S. S. (2021). Field-level Crop Classification Using an Optimal Dataset of Multi-Temporal Sentinel-1 and Polarimetric RADARSAT-2 SAR Data with Machine Learning Algorithms. *Journal of the Indian Society of Remote Sensing, 49,* 2945-2958. https://doi.org/10.1007/s12524-021-01436-0

Onyango, M. A., Resnick, K., Davis, A., & Shah, R. R. (2019). Gender-based Violence among Adolescent Girls and Young Women: A Neglected Consequence of the West African Ebola Outbreak. In D. Schwartz, J. Anoko, & S. Abramowitz (Eds.), *Global Maternal and Child Health* (pp. 121-132). Springer. https://doi.org/10.1007/978-3-319-97637-2_8

Petrowski, N., Cappa, C., Pereira, A., Mason, H., & Daban, R. A. (2021). Violence against Children during COVID-19: Assessing and Understanding Change in Use of Helplines. *Child Abuse & Neglect, 116,* Article ID: 104757. https://doi.org/10.1016/j.chiabu.2020.104757

Pew Research Center (2014). *Emerging Nations Embrace Internet, Mobile Technology.* Pew Research Center.

Philbrick, W. C., Milnor, J. R., Deshmukh, M., & Mechael, P. N. (2021). PROTOCOL: The Use of Information and Communications Technologies (ICT) for Contributing to the Prevention of, and Response to, Sexual and Gender-Based Violence against Women and Children in Lower- and Middle-Income Countries: An Evidence and Gap Map. *Campbell Systematic Reviews, 17,* e1153. https://doi.org/10.1002/cl2.1153

Radford, L., & Sommarin, C. (2014). *Preventing and Responding to Child Sexual Abuse and Sexual Exploittation. UNICEF Guidance (500792015315).* American Psychological Association.

Sexual Violence Research Initiative (2017). *SVRI Special Update: Technology in Prevention and Response to Violence against Women and Violence against Young People.* SVRI.

Temmerman, M. (2015). Research Priorities to Address Violence against Women and Girls. *The Lancet, 385,* e38-e40. https://doi.org/10.1016/s0140-6736(14)61840-7

UN Women (2019). *Facts and Figures: Ending Violence against Women.*

UNESCO (2020). *Glossary: Information and Communication Technologies.*

UNFPA (2023). *Socio-Economic Determinants of Gender-Based Violence [GBV]: SDG Analytics on the Global GBV Scenario with Special Reference to Technology Facilitated Gender-Based Violence and Adolescent Birth Rates.* New York Medical College

UNICEF (2014). *Hidden in Plain Sight: A Statistical Analysis of Violence against Children.*

United Nations Gender Equality Observatory for Latin America and the Caribbean (2020). *Femicide or Feminicide.*

United Nations Office for the Coordination of Humanitarian Affairs (2019). *Gender-Based Violence: A Closer Look at the Numbers.*

United Nations Office on Drugs and Crime (2019). *Global Study on Homicide: Gender Related Killings of Women and Girls.*

United Nations Secretary-General (2019). *Conflict-Related Sexual Violence: Report of Secretary-General.* United Nations.

USAID & PEPFAR. (2020). *MEASURE Evaluation: Sexual and Gender-Based Violence.*

World Bank Group (2016). *World Development Report 2016: Digital Dividends.* World Bank.

World Bank Group (2018). *The Little Data Book on Information and Communication Technology.* International Bank for Reconstruction and Development/The World Bank.

World Health Organization (2013). *Global and Regional Estimates of Violence against Women: Prevalence and Health Effects of Intimate Partner Violence and Non-Partner Sexual Violence* (pp. 16-18, 20).

World Health Organization (2016). *INSPIRE Seven Strategies for Ending Violence against Children.*

World Health Organization (2022) Violence Against Women and Girls—What Data Tells?