HARMFUL IMPACT OF CYBER-ATTACKS ON WOMEN'S SECURITY AND EDUCATION DURING ARMED CONFLICTS

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Abstract

Gender plays a pivotal yet underexplored role in shaping experiences and vulnerabilities in international cybersecurity. This article explores how gender influences online behaviors, power dynamics, and susceptibility to cyber threats, emphasizing its intersection with broader societal inequalities. Drawing on insights from studies on online gender-based violence and gender disparities in ICT sectors, we highlight the disproportionate impacts of malicious cyber operations on women and marginalized genders. The discussion examines the implications of internet shutdowns during conflicts, emphasizing their violation of human rights and exacerbation of gender inequalities. By advocating for a gender-sensitive approach to cybersecurity policy and practice, this article underscores the urgency of addressing these overlooked dimensions to promote equity and safety in digital spaces.

1. Introduction

Gender plays a crucial role in international cybersecurity, shaping online behaviors, determining access to resources, and influencing vulnerability. Malicious cyber operations can impact individuals differently based on their gender identity or expression, reflecting and amplifying offline social, economic, cultural, and political structures. Gender perspectives also influence perceptions of weapons, war, and militarism, offering nuanced insights into policy and practice in cybersecurity.

Much of our understanding of gender in cybersecurity stems from studies on online gender-based violence (GBV) and gender disparities within the information and communications technology (ICT) sector. Online GBV often stems from historical power imbalances between genders, underscoring the need to address these issues within broader efforts to uphold women's human rights. Despite this, international discussions on cybersecurity often overlook gender dimensions, resulting in limited knowledge about how malicious cyber operations affect individuals differently based on gender or other vulnerabilities[1].

Gender, distinct from biological sex, encompasses societal roles, behaviors, and opportunities deemed appropriate for girls, boys, women, and men. Gender constructs influence power dynamics within families, societies, and global contexts, shaping access to resources and opportunities.

A gender analysis in cybersecurity explores how armed violence and conflict are experienced differently based on gender identity. It examines power dynamics and access limitations, offering critical insights into gender-specific impacts of cyber incidents.

2. Differentiated Impact of Cyber Incidents on the Basis of Gender

First Student Conference: "Gender Dimension of CyberSecurity"

Women are disproportionately affected by conflict and threats to international peace and security, often in less visible ways compared to men, or targeted specifically because of their gender. The threats faced by women in cyberspace are intricately linked to their offline realities. For instance, online doxxing can escalate to physical threats and violence against women, highlighting the continuum of online gender-based violence (GBV). Even in cases where data breaches are not directly aimed at women, underlying inequalities and discrimination can lead to differential impacts on them.

Governments predominantly use internet shutdowns as a tool to control information flows within their jurisdictions, but these tactics have also been employed during conflicts against entire populations, such as Russia's shutdown of the internet in Crimea in 2016. Defined as intentional disruptions of internet or electronic communications, these shutdowns range from bans on social media to total blackouts, impacting communities during times of political turmoil. Despite their broad impact on communities, research reveals gendered consequences due to societal power imbalances and women's specific internet usage patterns.

During wars and conflicts, internet shutdowns endanger lives by impeding access to vital information and exacerbating humanitarian crises. In Sudan, ongoing violence has seen internet shutdowns weaponized to block crucial information flows, exacerbating a dire humanitarian crisis with widespread displacement and casualties. Emergency assistance and humanitarian aid are significantly hindered, affecting access to essential services like safe routes and financial transactions, while also severing vital connections with family and loved ones.

Deliberately disrupting internet access during conflict, particularly when targeting civilian infrastructure, violates international humanitarian law and has been scrutinized by bodies like the International Criminal Court for potential crimes against humanity. Reports of atrocities in Sudan prompted investigations by the ICC and the UN Human Rights Council, underscoring the need to maintain communication channels for documenting abuses and preventing further crimes [2].

Internet shutdowns not only violate human rights but also undermine women's opportunities and worsen existing inequalities. For instance, they impede women's access to crucial information, economic opportunities, and the ability to advocate on critical issues like reproductive health and gender-based violence. These disruptions deepen the gender digital divide and hinder women's economic development globally.

The impact of internet shutdowns on women varies widely, affecting their personal safety, economic stability, emotional well-being, and educational opportunities. From financial losses in small businesses to disruptions in daily life and advocacy efforts, these shutdowns perpetuate gender disparities and limit women's empowerment worldwide [3].

3. Personal safety

Shutdowns were also reported when governments carried out security operations, severely restricting human rights monitoring and reporting. In the context of armed conflicts and during mass demonstrations, the fact that people could not communicate and promptly report abuses seems to have contributed to further insecurity and violence, including serious human rights violations.

Physical violence against women in public is a common phenomenon in many parts of the world. An interviewee gave the example of a contact in Tehran who is a single woman in her 30s, who lives near an area that was quite violent during the protests in late 2019, where women were getting arrested and assaulted. When the government shut down the internet during the protests, it left the woman without the ability to be in contact if anything happened to her. The respondent was worried about her contact's safety. The woman in Tehran reported feeling isolated and afraid to go out. In Pakistan's Federally Administered Tribal Area, or FATA, which has experienced an internet shutdown since 2016, people could go to internet cafes before fixed broadband was cut, but men make it difficult for women to go to internet cafes by creating a very hostile environment.

During partial internet shutdowns, people may be able to find ways to access the internet, but may not have access to the full range of communication channels that they rely on. For people who rely on secure communications channels because of their sexual orientation or gender identity, for example, being cut off from encrypted communications can be a threat to their safety. In a country where gay relationships are criminalized, not having access to encrypted communication services is scary and life-threatening.

3.1. Professional/economic impact Internet shutdowns also carry major economic costs for all sectors, disrupting, for example, financial transactions, commerce, and industry. Economic shocks provoked by shutdowns are felt over long periods of time, greatly exacerbating pre-existing social and economic inequalities. Shutdowns effectively deepen digital divides between and within countries.

There are a number of efforts to measure the economic costs of shutdowns, much of which is guesswork in part because so much of the informal sector is typically not included in such measurements. A number of interviews identified women's use of e-commerce as having a negative impact on their financial well-being when the internet is shut down. For example, in Iran women sell and distribute handcrafts and homemade food through online platforms for industry/e-commerce (Facebook and Telegram). Internet shutdowns disrupted this.

3.2. Emotional well-being Harm to emotional well-being is a commonly expressed response to internet shutdowns, both by people experiencing the shutdown and by people in the diaspora. As an article on the prolonged shutdown in FATA in Pakistan put it, "Women, already deeply vulnerable in Pakistani society at large, are even more oppressed in the tribal areas. Their mobility is very restricted—and now the roads to information have been shut to them. Moreover, many men from FATA move to Gulf states to work as manual laborers on construction sites. Before the shutdown, local entrepreneurs started internet cafes that people could use to talk to their family members abroad. Now that those cafes don't exist anymore, people are forced to go months without talking to family members." Interview respondents who live outside their country (Iran and Venezuela) reported emotional distress at not being able to be in touch with their relatives, especially their female relatives during times of social/political unrest [4].

3.3. Impact on education Beyond impacts on safety, work, and emotional well-being, the research found that there was a gendered dimension to education during shutdowns. For example, an interviewee in FATA noted that the shutdown affected people similarly, but because of patriarchy and cultural issues, there are/were differential effects. For example, women don't have much access to education throughout Pakistan, and in the tribal regions in

particular. The internet helped women access education, and now that it's off, men still have access to schools, but women do not. Women had to drop out of schools/colleges.

Conclusion

Internet shutdowns have emerged as the digital world has become increasingly essential for the realization of many human rights. Switching off the Internet causes incalculable damage, both in material and human rights terms. When a state shuts down the internet, both people and economies suffer. The costs to jobs, education, health, and political participation virtually always exceed any hoped-for benefit. Internet shutdowns jeopardize human rights and must never become a norm.

What this article clearly highlights is that swift action is needed to end Internet shutdowns. This includes more prominent reporting of their impacts, greater transparency by involved companies, and ensuring that we all defend connectivity from self-imposed disruptions.

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