

Conflict, Displacement and Overlapping Vulnerabilities

Understanding Risk Factors for Gender-Based Violence
among Displaced Women in Eastern Democratic
Republic of Congo

Jocelyn TD Kelly
Morgan Holmes
Niamh Gibbons
Amani Matabaro
Maarten Voors



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Abstract

Eastern Democratic Republic of Congo has been embroiled in decades-long conflict that has resulted in the forced displacement of millions of people and extremely high rates of gender-based violence. Much attention has been focused on conflict-related sexual violence; however, it is important to recognize that intimate partner violence is one of the most pervasive forms of gender-based violence in the world, including in conflict settings. This paper is among the first to use a large, randomized survey to analyze both sexual violence and intimate partner violence as outcomes. Displacement increases a woman's risk of past-year intimate partner violence by 6 percent and experiencing war abuses

increases the risk of lifetime intimate partner violence by 9 percent, after adjusting for other risk factors. Both exposure to war-related experiences and displacement independently increase the risk of past-year sexual violence by 6 percent, after adjusting for other risk factors. Forced displacement and traumatic war-related experiences are risk factors for intimate partner violence and sexual violence in this setting. Acknowledging these risks and creating programs that explicitly address the high risk of violence faced by displaced and war-affected women can more effectively break the cycles of violence that are often perpetuated in fragile settings.

This paper is a product of the Gender Global Theme. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://www.worldbank.org/prwp>. The authors may be contacted at jkelly@hsph.harvard.edu.

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Conflict, Displacement and Overlapping Vulnerabilities
Understanding Risk Factors for Gender-Based Violence among Displaced Women in Eastern
Democratic Republic of Congo

Jocelyn TD Kelly,^[†] Morgan Holmes,^[‡] Niamh Gibbons,^[†] Amani Matabaro,^[§] Maarten Voors^[||]

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Introduction

The eastern region of the Democratic Republic of Congo (DRC) has been embroiled in conflict for more than two decades. Multiple tragic superlatives highlight the consequences of this war. The conflict has been called the deadliest since World War II, with population-based mortality studies estimating 5.4 million excess deaths between 1998 and 2007 (IRC, 2007). Today, DRC has the largest internally displaced population in Africa and a total of 15.1 million people in need of humanitarian assistance (OCHA, 2020). More than 6.5 million people were forced to leave their homes between 2017 and the first half of 2020 (UNHCR, 2020; IDMC, 2020) and while more than 900,000 have fled to neighboring countries, the majority of displaced people have sought refuge internally (UNHCR, 2020).

The conflict has led to another unenviable label for DRC: due to very high rates of gender-based violence (GBV), the country has been called “the worst place in the world” to be a woman or child (HRW, 2009). This paper addresses two of the most prevalent forms of GBV in DRC: intimate partner violence (IPV) and sexual violence. Approximately one-third of Congolese women report having experienced sexual violence at some point in their lives (DRC DHS, 2014), multiple times higher than the WHO’s estimated global average of 6% (WHO 2020). Rape in the conflict-affected region of Eastern DRC has been described as an “epidemic” and a “weapon of war” (UNFPA, 2009; HRW, 2009). The United Nations estimated 200,000 women were sexually assaulted in Eastern Congo during the first 12 years of the conflict (UNFPA, 2009), and among women at hospitals with sexual violence programs, 75.7% reported experiencing rape and 68.9% experienced gang rape (Kelly et. al, 2011). Sexual violence remains widespread in Eastern DRC today (United Nations, 2021; Lugova et al., 2020; Department of State, 2019).

The factors that contribute to the high levels of sexual violence in DRC are complex. The conflict-affected provinces of North and South Kivu -- the provinces of focus for this paper -- have been among the areas with the highest rates of rape (Peterman et al., 2011). Armed groups’ motivations for perpetrating sexual violence are believed to be linked to their conflict objectives, such as

[†] Harvard Humanitarian Initiative

[‡] USAID

[§] Action Kivu

[||] Wageningen University

sowing terror and disorder among communities (Bartels et al., 2013; Kalisya et al., 2011; HRW, 2009). However, in DRC and globally, there is recognition that violence against women in wartime is a manifestation of underlying gender inequalities, exacerbated by the breakdown of gender roles, the rule of law, security institutions, economic life, and social capital during conflict (Ellsberg et al., 2020a; Swaine et al., 2019; HRW, 2009). Sexual violence can be both a driver and a result of displacement, as women are cut off from normal, protective social structures or forced into exploitative situations (Lugova et al., 2020; Wachter et al., 2017; Cardoso et al., 2016).

While much attention has understandably focused on conflict-related sexual violence in DRC, intimate partner violence (IPV) is even more widespread (Peterman et al., 2011). Globally, intimate partner violence is the most common form of violence against women (WHO, 2020). In DRC, the 2014 DHS found that more than two-thirds of partnered women experienced sexual, physical, or emotional violence by an intimate partner (Tlapek, 2015), putting the country at nearly twice the global prevalence of this form of violence (WHO, 2020). Despite being more common than sexual violence by armed actors (Stark & Ager, 2011; Peterman et al., 2011; Parmar et al., 2012), IPV is far less visible because it occurs in the home, may not be reported and may be accepted or condoned due to cultural norms and taboos that inhibit speaking out against this form of violence (DRC DHS, 2014; Stark & Ager, 2011; Hynes et al., 2004; Peterman et al., 2011; Parmar et al., 2012).

Drivers of IPV in both conflict and non-conflict settings are often discussed as an ecological framework in which violence results from the interaction of factors at the demographic, societal, communal, interpersonal, and individual levels (Heise, 1998; Swaine et al., 2019; Stark et al., 2017). Multiple studies find that destabilized gender norms in displacement settings drive IPV (Wachter et al., 2017; Ager et al., 2018; Cardoso et al., 2016); and several find that increased exposure to conflict or sexual violence also increases the risk of IPV (Kelly et al., 2018; Ellsberg et al., 2020a; Falb et al., 2013). Of particular relevance for this study, conflict victimization, such as experiencing an armed attack, detention, or sexual violence, has been linked to increased risk of IPV among refugees on the Thai-Burma border (Falb et al., 2013). The authors noted conflict victimization may cause shame and discord within the household that is then expressed through IPV (Falb et al., 2013).

A range of drivers have been found to increase IPV risk in displacement settings. In Ethiopian camps, religion, husband's alcohol abuse, not being in an arranged marriage, occupation, a family history of one's mother experiencing IPV, low literacy, and husband's illiteracy or unemployment were all linked to IPV risk (Feseha et. al, 2012). Women in Northern Ugandan camps ranked IPV as a lower concern than non-partner rape, suggesting a normalization of this violence (Ager et. al, 2018). A three-country study found men's substance use, separation from family, rapid remarriages and forced marriages to be correlated with increased IPV rates (Wachter et. al, 2017). Despite high levels of displacement in DRC, few studies have examined interactions between displacement, conflict exposure and GBV. One exception examined experiences in Congolese refugee camps in Rwanda, where approximately 20% of ever-partnered women reported past-year IPV and 52.7% reported violence committed by a stranger (Wako et. al, 2015). There, the factor most significantly associated with IPV was violence committed by a stranger (Wako et. al, 2015).

Sequelae of both IPV and sexual violence include poorer mental and reproductive health outcomes (Campbell, 2002; Decker et al., 2014; Devries et al., 2013; Lugova et al., 2020), as well as unintended pregnancy, physical harm, and increased vulnerability to sexually transmitted diseases and HIV (Decker et al., 2009; Jewkes et al., 2010; Kouyoumdjian et al., 2013; Miller et al., 2010; Mitchell et al., 2016; Pallito et al., 2013; Stockman et al., 2013; Lugova et al., 2020). Victims have difficulty seeking health care and are more vulnerable to substance abuse (Decker et al., 2014; Heise et al., 2002; Stockman et al., 2013). In the case of IPV, personal agency is limited by living under a partner's control (Campbell, 2002; WHO, 20202013). In conflict settings, intense daily stressors, including IPV, may account for high levels of psychological distress that previously were attributed solely to the stress of war (Miller et al., 2010; Falb et al., 2013b). Sexual violence can also lead to community stigma, exclusion, and rejection, exacerbating the trauma of the attack (Kelly et al., 2017; Steiner et al., 2009).

A growing number of studies are also documenting how simply living in a conflict-affected place may increase the risk of interpersonal violence, including GBV, even long after the conflict is over. This "contagion" effect of violence has been documented in Liberia, Colombia, Nigeria and Mali (Kelly et. al, 2018; Kelly et al. 2019; Ekhatior-Mobayode et al, 2020; Ekhatior-Mobayode et al 2021, forthcoming; Kelly et al 2021, forthcoming). In Liberia, residence in more heavily conflict-affected districts was associated with a 50% increased IPV risk four years after formal peace was declared.

These studies highlight the importance of documenting and understanding the long-term and often hidden impact of conflict and displacement, with the aim of creating programs that may more effectively disrupt cycles of violence.

Given the high level of both conflict and displacement in Eastern DRC, better understanding the risk factors for sexual violence and IPV is critical. While a number of papers have examined the impact of displacement on GBV, and an increasingly robust literature examines the impact of conflict on GBV, very few papers have explicitly examined how both risk factors may coalesce to increase the risk of multiple forms of GBV. Understanding gendered dimensions of conflict and displacement is critically important to create effective development and humanitarian responses (Arango et al, 2021, forthcoming). This paper presents results from a large-scale, population-based survey that addresses how both displacement and conflict-related abuses are associated with IPV and sexual violence victimization among women.

Methods

Data Collection

The data was collected as part of a baseline survey for the *Tushinde Ujeuri* program, a 5-year USAID-funded program that aims to improve prevention and response to GBV in Eastern DRC. Villages were purposefully selected by Tushinde Ujeuri staff before programming began and reflect sites eligible for implementation. As such, the included villages are not fully representative of Eastern DRC or South and North Kivu (see Appendix Figure A1). In Appendix Table A1, we compare our study sample to the broader Congolese population using 2013–14 DHS data. Eighty villages were randomly selected from a list of 160 villages across three health zones in Eastern DRC to receive the CBTH program. The baseline survey was collected in all 160 villages that are part of the Impact Evaluation across Walikale, Katana, and Nyangezi Health Zones, and in an additional 32 avenues in the semi-urban Karisimbi Health Zone.

Within each village, field teams used a "random-walk" methodology to randomly select households. The household survey was administered to a target of 20 households per village across all 192 villages, comprising a total sample of 4,223 respondents. All respondents were asked questions about both victimization and perpetration of IPV and sexual violence. The rates of

reported victimization for both IPV and sexual violence were much lower for men. Since drivers of victimization may be very different for men than for women, we restricted the following analysis to the 2,120 female respondents in our sample.

Ethical Considerations

This survey addressed inherently sensitive and traumatic topics as part of a broader impact evaluation aimed at providing programming to better prevent and address GBV. A number of measures were put in place to ensure the safety and confidentiality of respondents during the research process, and to address and mitigate any risks. During the informed consent process, enumerators emphasized the protection of participants' privacy, including voluntary participation and the right to decline study participation, refuse to answer any or all questions, or to terminate the interview at any time. All surveys were conducted in a private setting. In each randomly selected household, enumerators interviewed a randomly selected male or female adult respondent (age 18 or over). To ensure the highest level of responsiveness on sensitive topics, female enumerators only interviewed female respondents and male enumerators only interviewed male respondents.

Enumerators were trained on how to identify participant distress and respond appropriately. Research staff were also trained on how to refer people confidentially and respectfully for additional services if needed. All beneficiary participants were provided with a list of resources including local health, police, psychosocial and women's support. In addition, enumerators were provided with a space at the end of each survey to make additional notes and to assess their interaction with the respondents and to report any issues. All respondents' identities were held confidential and the tablets were encrypted and password protected. Data was transferred from tablets via an encrypted connection and stored on encrypted systems. The research protocol for this study was approved by the NORC Institutional Review Board and by a local Congolese Ethical Review board.

Dependent Variables: IPV and Sexual Violence

Our main GBV-related outcomes are IPV and sexual violence. For the IPV analysis, we focus on ever-partnered women, representing 83% of the total female sample (n=1,680), who were asked about a list of eight behaviors they may have experienced relating to physical and sexual intimate

partner violence (Table 1). To measure IPV, we used the Conflict Tactics Scale (CTS), one of the most widely measured and reliable measurement tools available (Straus et al., 1990).

In our sample, 57% of women (n=963) reported experiencing at least one of the behaviors listed in Table 1 and were coded as having ever experienced IPV. During the modeling analysis, three cases were dropped because of missing information in the independent variables added to the model, leaving 1,677 individuals (99.8% of the original 1,680) in the final analytic sample.

Of those women who had ever experienced IPV, nearly three-fourths reported experiencing these events during the past 12 months (73%, n=702). Women who experienced past-year IPV were compared to women who had not experienced IPV in our models. Women who had experienced lifetime IPV were excluded from the analysis, creating a sample of 1,419. During the modeling procedure, two cases were dropped due to missing data (less than 0.1% of the sample). This analysis helps refine our understanding of how the main risk factors (conflict and displacement) not only relate to lifetime IPV, but also current IPV.

For the sexual violence analysis, we asked all female respondents the following question: “At any time in your life, as a child or as an adult, has anyone ever forced you in any way to have sexual intercourse or perform any other sexual acts when you did not want to?” This approach is in keeping with the DHS assessment of sexual violence.

Those women who responded “yes” were coded as having experienced sexual violence. In all, 20% (n=434) of the total sample (n=2,120) reported having experienced such events. While there was no missing data from lifetime or past-year sexual violence, as independent variables were added to the model, some cases were dropped from the analysis. The final stepwise model of lifetime sexual violence included 97.4% (n=2,064) of the original cases.

Of women who reported sexual violence at any point in their lives, the majority (71%, n=310) also experienced sexual violence within the past year. As with past-year IPV, women who experienced past-year sexual violence were compared to women who had not experienced sexual violence in our models. Women who had experienced lifetime sexual violence were excluded from the analysis. This approach highlights how the main risk factors (conflict and displacement) are

associated with current forms of GBV. This sample was comprised of 1,996 women. The final stepwise model included 1,956 cases (98% of the original sample).

Table 1. Conflict Tactics Scale for Intimate Partner Violence

Does/Did your (last) husband/partner ever do any of the following things to you:	
Partner physical violence	a) Push you, shake you, or throw something at you? b) Slap you? c) Twist your arm or pull your hair? d) Punch you with his fist or with something that could hurt you? e) Kick you, drag you, or beat you up? e) Try to choke you or burn you on purpose? d) Threaten or attack you with a knife, gun, or other weapon?
Partner sexual violence	g) Physically force you to have sexual intercourse with him even when you did not want to? h) Force you to do any sexual acts you did not want to?

Displacement and War-Related Abuses

To capture conflict victimization, we focus on displacement and conflict-related abuses. To measure displacement, we asked whether respondents were never, ever or currently displaced. Respondents were coded as having been ever displaced if they answered “yes” to the question “Have you ever been displaced as a result of an armed conflict?” Respondents were coded as being currently displaced if they answered “yes” to the question “Are you currently displaced?” Across the sample 52% of respondents reported to have been displaced.

To measure individual exposure to conflict abuses, the survey asked respondents about a range of war experiences by armed groups, including the destruction or looting of property, physical abuse forced labor and forced physical harm to others (see Table 2). This scale has been used in previous studies in other conflict contexts, including Sierra Leone, Liberia and DRC, and was chosen for this reason (Vinck & Pham, 2013, Kelly, 2014).

Table 2. Questions about Exposure to Conflict Abuses

Economic loss	House destroyed by an armed group Looting or theft by an armed group Forced to contribute cash or goods to an armed group
Physical violence	Abducted by an armed group Physically beaten or abused by an armed group Forced to carry loads or perform other work by an armed group Forced to hurt someone by an armed group

Independent Variables

Appendix Table A2 includes descriptive statistics for our sample. In the IPV analysis, we also adjust for experience of lifetime sexual violence, since a number of studies in displacement settings have found that previous violence experiences can be highly correlated with IPV (Feseha et. al, 2012; Logie et. al, 2019; Wako et al, 2015).

Given our data structure (all data was collected at the same time and did not include the timing of each victimization event), we cannot assess the sequence of events, i.e., if displacement led to more conflict exposure or vice versa. In addition, due to the relatively high correlation between both types of events, we do not include an interaction term due to overfitting.

Data Analysis

We use a simple linear regression model to compare respondents who experienced conflict to those who did not:

$$y_{ij} = \alpha_k + \beta V_i + \varepsilon_{ij} \quad (1)$$

Where, y_{ij} refers to our GBV variables, i.e., IPV and sexual violence (ever or during past 12 months), of respondent i (with $i = 1, \dots, 20$), in community j (with $j = 1, \dots, 192$), V_i is the respondent level victimization index, indicating either displacement or conflict exposure, α_k refers to health zone level fixed effects ($k=1, \dots, 4$) to control for common factors at the that level, so that we are isolating variation in exposure to violence across respondents within the same health zone. We cluster standard errors at the village level ε_{ij} . β is then the average difference in GBV for women who were displaced or conflict exposed. As both victimization measures are likely positively correlated (some women are exposed to both types of victimization), we also estimate equation (1) including both measures separately. As a robustness analysis, we add X_i a vector of respondent characteristics that are plausibly correlated with victimization and GBV (these include age, education, marital status; employment; status as head of household; children in the household; household assets), and separately add Z_i , a vector comprising known risk factors (including if, among ever-partnered women, their partner uses alcohol or drugs, whether their father beat their mother or themselves during childhood and if the respondent condones wife beating).

While these control variables reduce omitted variable bias, they cannot rule out reverse causality or remaining bias completely. The estimates presented in our tables should be interpreted as descriptive correlations and not evidence of causal effects. We also re-estimate equation (1) using village instead of health zone fixed effects, so that we are comparing the experiences of women within the same village. All analyses were conducted with Stata/SE 14.0 (StataCorp LP, College Station, TX).

Results

Demographics

Respondents on average were 32 years old, with nearly all (94%) reporting having dependents at home. Just 25% of respondents stated they were the head of the household, and only 41% had any formal education. For our wealth index we took the sum of assets owned by each household, including items such as television, construction materials, and access to water, sanitation and electricity. We captured labor-market participation by asking women if they worked in the past 12 months. Women reported whether they were single (15%), married or cohabitating (61%), in a polygamous marriage (7%), or divorced/widowed (16%). In Appendix Table A1, we compare our study sample to the broader Congolese population using the 2014 DHS.

Intimate Partner Violence Analysis

Displacement and Intimate Partner Violence

The IPV analysis restricted its sample to ever-partnered women, who represented 82.9% of the total female sample (n=1,758). Of these women, 4.4% (n=78) did not answer questions about partner violence, leaving a total sample of 1,680 women who answered questions about IPV. Over one-half of the women (57.32%, n=963) reported having experienced IPV at some point in their lives. Of these women, nearly three-fourths (57.32%, n=70) reported past-year IPV.

Table 3 presents results of the stepwise modeling procedure, examining the relationship between displacement and lifetime IPV versus no IPV. Column 1 is the unadjusted association; columns 2-4 add variables to adjust for demographics, wealth, place of residence, previous risk factors related to violence, partner drug or alcohol use and experiences with sexual violence and column 4 adds village fixed effects. This procedure is then repeated to examine the relationship between displacement and past-year IPV versus no IPV.

Displacement is significantly associated with both lifetime and past-year IPV across the models. In the final adjusted model, women who have experienced displacement are 10% more likely to have also experienced lifetime IPV ($p < 0.001$) in the model with fixed effects at the health zone level. This association remains relatively stable over the stepwise model fitting procedure. When adjusting for village-level effects, the association is slightly attenuated, but still large and significant (8%, $p < 0.001$).

Very similar results are seen for the past-year IPV model, with women who experience displacement experiencing 12% ($p < 0.001$) higher risk for past-year IPV compared to their non-displaced counterparts adjusting for health zone effects. Again, these results are slightly attenuated but still significant in the model including village fixed effects (9%, $p < 0.05$). Having experienced sexual violence at any point also raised the risk of both lifetime and past-year IPV significantly. For both lifetime and past-year IPV, being in a polygamous union was a risk factor for violence in the final model, as was having more children under the age of 18 in the household, having a father who was violent to the respondent's mother, and having a partner who uses drugs or alcohol. In both models, a higher wealth score and being head of household was protective.

Table 3 . Association between Displacement with Lifetime and Past-year IPV

	(1) Lifetime IPV (ever married women)	(2) Lifetime IPV (ever married women)	(3) Lifetime IPV (ever married women)	(4) Lifetime IPV (ever married women)	(5) IPV during past year (ever married women)	(6) IPV during past year (ever married women)	(7) IPV during past year (ever married women)	(8) IPV during past year (ever married women)
Displaced at any point	0.123*** [0.072,0.173]	0.124*** [0.074,0.174]	0.103*** [0.054,0.153]	0.079* [0.021,0.138]	0.135*** [0.076,0.193]	0.145*** [0.088,0.203]	0.118*** [0.061,0.175]	0.088* [0.024,0.152]
Age		-0.002* [-0.004,- 0.000]	-0.001 [0.003,0.001]	-0.001 [0.003,0.001]		-0.006*** [-0.008,- 0.004]	-0.005*** [-0.007,- 0.003]	-0.005*** [-0.007,- 0.003]
Received any education		-0.026 [- 0.081,0.028]	-0.008 [0.060,0.043]	-0.016 [0.070,0.038]		-0.034 [0.096,0.027]	-0.011 [0.070,0.047]	-0.031 [0.089,0.027]
Married in polygamous union (Ref: married in single union)		0.102* [0.017,0.187]	0.075 [- 0.009,0.159]	0.098* [0.018,0.179]		0.104* [0.010,0.198]	0.062 [- 0.028,0.152]	0.094* [0.005,0.182]
Divorced or widowed (Ref: married in single union)		0.047 [- 0.035,0.128]	0.047 [0.028,0.121]	0.059 [0.021,0.139]		-0.064 [0.159,0.030]	-0.046 [0.133,0.042]	-0.034 [0.124,0.056]
Employed in past year		0.033 [0.040,0.106]	0.028 [- 0.122***]	0.025 [0.040,0.090]		0.004 [- 0.132*]	0.004 [0.072,0.080]	0.026 [- 0.150***]
Head of household		-0.123*** [-0.194,- 0.052]	-0.122*** [-0.187,- 0.057]	-0.114*** [-0.179,- 0.048]		-0.132* [-0.210,- 0.053]	-0.128*** [-0.198,- 0.059]	-0.150*** [-0.218,- 0.082]
Number of children <18 in household		0.112* [0.007,0.217]	0.117* [0.018,0.215]	0.099 [-]		0.179*** [0.081,0.277]	0.172*** [0.077,0.267]	0.155* [0.040,0.269]

Asset count	-0.014 [-0.027,-0.001]	-0.014* [-0.027,-0.001]	0.007,0.205] -0.016* [-0.031,-0.001]		-0.011 [-0.027,0.005]	-0.010 [0.024,0.005]	-0.011 [-0.027,0.005]	
Father beat mother in childhood		0.212***	0.239***			0.221***	0.236***	
Partner uses alcohol/drugs		[0.164,0.261] 0.171***	[0.191,0.288] 0.138***			[0.168,0.275] 0.174***	[0.184,0.288] 0.133***	
Condomes wife beating		[0.120,0.223] -0.037	[0.087,0.189] -0.002			[0.120,0.228] -0.014	[0.080,0.187] -0.010	
Lifetime sexual violence		[-0.089,0.015] 0.164***	[-0.057,0.054] 0.124***			[-0.067,0.039] 0.209***	[-0.068,0.048] 0.165***	
Constant	0.490*** [0.395,0.585]	0.543*** [0.392,0.694]	[0.104,0.224] 0.246* [0.099,0.392]	[0.061,0.186] 0.325* [0.033,0.617]	0.407*** [0.309,0.505]	0.537*** [0.387,0.686]	[0.144,0.273] 0.200* [0.046,0.354]	[0.097,0.234] 0.364* [0.061,0.667]
Fixed effects	Health Zone	Health Zone	Health Zone	Village	Health Zone	Health Zone	Health Zone	Village
Observations	1680	1677	1677	1677	1419	1417	1417	1417
R ²	0.034	0.057	0.156	0.291	0.043	0.105	0.221	0.369

Robust clustered SE at village level

* p<0.05, **p<0.01, ***p<0.001

To further explore how the timing of displacement might affect women's risk of IPV, the model was run disaggregating displacement experience by ever versus currently displaced (Table 4). We see that both experiences significantly increase women's risk of both forms of IPV, but current displacement increases risk nearly twofold more compared to former displacement. Women who were formerly displaced have 9% (p<0.05) higher risk of lifetime IPV, while women who are currently displaced have 15% higher risk (p<0.05). More pronounced results are seen for past-year IPV, with ever displaced women facing 11% higher risk (p<0.05) and currently displaced women facing 20% higher risk (p<0.001). These results are similar at the village level.

Table 4. Stepwise Model of Association between Former Versus Current Displacement with Lifetime and Past-year IPV

	(1) Lifetime IPV (ever married women)	(2) Lifetime IPV (ever married women)	(3) Lifetime IPV (ever married women)	(4) Lifetime IPV (ever married women)	(5) IPV during past year (ever married women)	(6) IPV during past year (ever married women)	(7) IPV during past year (ever married women)	(8) IPV during past year (ever married women)
Formerly displaced (Ref: Never displaced)	0.118*** [0.065,0.171]	0.121*** [0.068,0.173]	0.101*** [0.049,0.154]	0.087* [0.025,0.148]	0.126*** [0.066,0.186] 0.241***	0.139*** [0.079,0.199] 0.247***	0.112*** [0.051,0.173] 0.202***	0.095* [0.028,0.161] 0.152* [0.053,0.250]
Currently displaced (Ref: Never displaced)	0.217*** [0.137,0.297]	0.216*** [0.136,0.297]	0.179*** [0.108,0.249]	0.146* [0.058,0.235]	[0.146,0.337]	[0.154,0.341]	[0.119,0.285]	[0.053,0.250]
Age		[-0.004,-0.000] -0.027	[-0.001,0.001] -0.009	[-0.001,0.001] -0.015		-0.006*** [-0.008,-0.004] 0.004 -0.037	-0.005*** [-0.007,-0.003] 0.003 -0.013	-0.005*** [-0.007,-0.003] 0.003 -0.031
Received any education		[-0.081,0.026] 0.109*	[-0.060,0.042] 0.081	[-0.069,0.038] 0.100*		[-0.097,0.024] 0.110*	[-0.071,0.044] 0.067	[-0.089,0.027] 0.092*
Married in polygamous union (Ref: married in single union)		[0.024,0.193]	[-0.003,0.165] 0.044	[0.019,0.181]		[0.016,0.204]	[-0.023,0.157]	[0.003,0.181]
Divorced or widowed (Ref: married in single union)		0.043	0.044	0.055		[-0.160,0.030]	[-0.135,0.041]	[-0.126,0.054]
Employed in past year		[-0.039,0.125] 0.033	[-0.030,0.118] 0.029	[-0.025,0.136] 0.026		0.005	0.004	0.027

						0.078,0.088]	0.071,0.080]	0.045,0.099]
						-0.132***	-0.129***	-0.150***
Head of household	[-0.039,0.106]	[-0.038,0.096]	[-0.039,0.090]			[-0.210,-0.054]	[-0.198,-0.060]	[-0.218,-0.082]
						0.170***	0.165***	0.153*
Number of children <18 in household	[-0.192,-0.050]	[-0.186,-0.056]	[-0.177,-0.047]			[0.071,0.269]	[0.070,0.261]	[0.038,0.268]
Asset count	[0.001,0.211]	[0.013,0.210]	[-0.009,0.203]			-0.009	-0.008	-0.010
Father beat mother in childhood	-0.013	-0.012	-0.015			[-0.025,0.007]	[-0.023,0.006]	[-0.026,0.006]
Partner uses alcohol/drugs	[-0.027,0.002]	[-0.026,0.001]	[-0.030,0.000]				[0.220***]	[0.234***]
							[0.166,0.273]	[0.182,0.286]
Condoms wife beating		[0.163,0.260]	[0.190,0.287]				0.171***	0.134***
							[0.118,0.224]	[0.081,0.187]
Lifetime sexual violence		[-0.036]	[-0.003]				-0.014	-0.011
							[-0.067,0.039]	[-0.069,0.047]
							0.208***	0.165***
							[0.143,0.272]	[0.096,0.233]
Constant	0.482***	0.537***	0.243*	0.323*	0.401***	0.532***	0.200*	0.362*
	[0.387,0.577]	[0.386,0.687]	[0.097,0.390]	[0.030,0.615]	[0.303,0.498]	[0.384,0.681]	[0.047,0.353]	[0.058,0.665]
Fixed effects	Health Zone	Health Zone	Health Zone	Village	Health Zone	Health Zone	Health Zone	Village
Observations	1680	1677	1677	1677	1419	1417	1417	1417
R ²	0.041	0.063	0.160	0.293	0.050	0.113	0.225	0.372
P-value F-test	0.014	0.015	0.027	0.151	0.009	0.013	0.022	0.137
Formerly = Currently displaced								

Robust clustered SE at village level

* p<0.05, **p<0.01, ***p<0.001

War-Related Abuses and Intimate Partner Violence

As with displacement, experiences with war-related abuses by armed groups are highly and significantly associated with lifetime IPV compared to no IPV, and with past-year IPV compared to no IPV (Table 5). In the final model, women who experienced at least one war-related abuse had a 12% higher risk of lifetime IPV ($p<0.001$) and 14% higher risk of past-year IPV ($p<0.001$) when accounting for health zone-level fixed effects. This risk falls to 10% for lifetime IPV and 12% for past-year IPV when accounting for village-level effects, but still remains highly significant.

Table 5. Stepwise Model of Association between War Experiences with Lifetime and Past-year IPV

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Lifetime IPV (ever married women)	Lifetime IPV (ever married women)	Lifetime IPV (ever married women)	Lifetime IPV (ever married women)	IPV during past year (ever married women)	IPV during past year (ever married women)	IPV during past year (ever married women)	IPV during past year (ever married women)
War-related abuses (any versus none)	0.158***	0.160***	0.121***	0.104***	0.185***	0.189***	0.143***	0.120***
	[0.105,0.211]	[0.108,0.213]	[0.069,0.173]	[0.048,0.160]	[0.125,0.245]	[0.131,0.247]	[0.086,0.201]	[0.060,0.180]
Age		-0.002*	-0.001	-0.001		-0.006***	-0.005***	-0.005***
		[-0.004,-0.000]	[-0.003,0.001]	[-0.003,0.001]		[-0.008,-0.004]	[-0.006,-0.003]	[-0.007,-0.003]
Received any education		-0.028	-0.010	-0.017		-0.038	-0.015	-0.034
Married in polygamous union (Ref: married in single union)		[-0.082,0.026]	[-0.062,0.041]	[-0.071,0.036]		[-0.099,0.023]	[-0.072,0.043]	[-0.092,0.024]
		0.102*	0.075	0.101*		0.101*	0.061	0.094*
Divorced or widowed (Ref: married in single union)		[0.017,0.187]	[-0.009,0.160]	[0.019,0.182]		[0.006,0.196]	[-0.030,0.152]	[0.005,0.184]
			0.055	0.065		-0.047	-0.033	-0.025

Employed in past year	[0.024,0.136] 0.031	[0.020,0.129] 0.027	[0.015,0.144] 0.024	[0.141,0.046] 0.000	[0.122,0.055] 0.001	[0.114,0.064] 0.025	
Head of household	[0.040,0.103] -0.131***	[0.039,0.093] -0.129***	[0.042,0.089] -0.120***	[0.082,0.083] -0.141***	[0.075,0.076] -0.135**	[0.048,0.098] -0.157**	
Number of children <18 in household	[-0.201,-0.061] 0.116*	[-0.193,-0.064] 0.121*	[-0.185,-0.054] 0.101	[-0.218,-0.063] 0.184***	[-0.205,-0.066] 0.178***	[-0.225,-0.089] 0.158*	
Asset count	[0.010,0.221] -0.013	[0.022,0.219] -0.013	[-0.004,0.206] -0.015*	[0.086,0.282] -0.010	[0.083,0.272] -0.009	[0.046,0.271] -0.010	
Father beat mother in childhood	[-0.028,0.001] 0.028,0.001	[-0.027,0.001] 0.209***	[-0.030,-0.000] 0.238***	[0.026,0.005] 0.000	[0.023,0.005] 0.219***	[0.026,0.006] 0.235***	
Partner uses alcohol/drugs		[0.161,0.258] 0.163***	[0.190,0.287] 0.132***		[0.166,0.272] 0.164***	[0.183,0.287] 0.127***	
Condoned wife beating		[0.112,0.214] -0.037	[0.081,0.182] -0.001		[0.111,0.217] -0.015	[0.074,0.180] -0.012	
Lifetime sexual violence		[0.088,0.015] 0.163***	[-0.056,0.054] 0.123***		[-0.068,0.037] 0.206***	[-0.070,0.046] 0.163***	
Constant	0.496*** [0.407,0.584]	0.542*** [0.396,0.689]	0.256*** [0.112,0.401]	0.410*** [0.320,0.500]	0.537*** [0.395,0.680]	0.214* [0.064,0.363]	0.372* [0.069,0.676]
Fixed effects	Health Zone	Health Zone	Health Zone	Village	Health Zone	Health Zone	Village
Observations	1680	1677	1677	1677	1419	1417	1417
R ²	0.043	0.066	0.159	0.294	0.057	0.118	0.226

Robust clustered SE at village level
* p<0.05, **p<0.01, ***p<0.001

Displacement, War-Related Abuses and Intimate Partner Violence

Finally, a core question remains about whether displacement and war-related abuses may *independently* increase the risk of IPV, after adjusting for both risk factors. In Table 6, we see that exposure to war-related experiences and displacement each increases risk of lifetime IPV and past-year IPV. Having been displaced at any point increases a woman's risk of lifetime and past-year IPV by 6% (p<0.05) and experiencing war abuses increased risk of lifetime IPV by 9% (p<0.05). These results attenuate when adjusting for village-level effects, although they remain robust in the health-zone effects model. Comparing victimized women within health zones (columns 1-3 and 5-7 in our tables), we find both displacement and conflict exposure are positively correlated to IPV and sexual violence. These effects are slightly attenuated when comparing women within the same village (columns 4 and 8). Note that both are positively correlated, but just lose statistical significance at the 5% level. This suggests that for women displacement is less robustly related to GBV within villages vs across villages, likely due to the clustered nature of displacement; in some villages there are no displaced women and in others the majority of women have been displaced.

Regardless of significance, across the columns in Table 6 we see that victimization variables are positively correlated to GBV, in addition, an F-test reveals that the two coefficients are not significantly different from each other throughout (p-value ranges 0.14 - 0.41).

Table 6. Stepwise Model of Association between War Experiences and Displacement with Lifetime and Past-year IPV

	(1) Lifetime IPV (ever married women)	(2) Lifetime IPV (ever married women)	(3) Lifetime IPV (ever married women)	(4) Lifetime IPV (ever married women)	(5) IPV during past year (ever married women)	(6) IPV during past year (ever married women)	(7) IPV during past year (ever married women)	(8) IPV during past year (ever married women)
Displaced at any point	0.061 [*]	0.061 [*]	0.060 [*]	0.049	0.060	0.071 [*]	0.066 [*]	0.053
Exposure to war-related abuses (any versus none)	[0.005,0.116] 0.129 ^{***}	[0.007,0.115] 0.132 ^{***}	[0.007,0.112] 0.093 [*]	[-0.013,0.111] 0.089 [*]	[-0.005,0.124] 0.157 ^{***}	[0.009,0.133] 0.156 ^{***}	[0.005,0.126] 0.113 ^{***}	[-0.014,0.120] 0.104 [*]
Age	[0.070,0.188]	[0.075,0.189] -0.002 [*] [-0.004,-0.000] -0.027	[0.037,0.150] -0.001 [-0.003,0.001]	[0.029,0.148] -0.001 [-0.004,0.001]	[0.090,0.224]	[0.094,0.219] -0.006 ^{***} [-0.008,-0.004] -0.037	[0.052,0.174] -0.005 ^{***} [-0.007,-0.003] -0.013	[0.042,0.167] -0.005 ^{***} [-0.007,-0.003] -0.032
Received any education		[-0.080,0.027] 0.102 [*]	[-0.060,0.042] 0.076	[-0.069,0.039] 0.101 [*]		[-0.097,0.024] 0.102 [*]	[-0.071,0.045] 0.062	[-0.089,0.026] 0.095 [*]
Married in polygamous union (Ref: married in single union)		[0.017,0.187] 0.052	[-0.009,0.160] 0.051	[0.020,0.182] 0.063		[0.007,0.196] -0.051	[-0.029,0.152] -0.037	[0.006,0.185] -0.027
Divorced or widowed (Ref: married in single union)		[-0.029,0.132] 0.031	[-0.024,0.125] 0.027	[-0.017,0.143] 0.023		[-0.145,0.042] -0.000	[-0.125,0.051] 0.000	[-0.117,0.063] 0.024
Employed in past year		[-0.040,0.103] -0.128 ^{***}	[-0.040,0.093] -0.126 ^{***}	[-0.042,0.089] -0.119 ^{***}		[-0.083,0.083] -0.139 ^{***}	[-0.076,0.076] -0.133 ^{***}	[-0.049,0.097] -0.157 ^{***}
Head of household		[-0.199,-0.058] 0.110 [*]	[-0.191,-0.061] 0.115 [*]	[-0.185,-0.053] 0.098		[-0.216,-0.061] 0.178 ^{***}	[-0.203,-0.064] 0.171 ^{***}	[-0.225,-0.088] 0.156 [*]
Number of children <18 in household		[0.005,0.215] -0.013 [-0.028,0.001]	[0.016,0.213] -0.013 [-0.027,0.001]	[-0.007,0.203] -0.015 [*] [-0.030,-0.000]		[0.081,0.275] -0.010 [-0.025,0.006]	[0.078,0.265] -0.009 [-0.023,0.005]	[0.043,0.268] -0.010 [-0.026,0.005]
Asset count			0.211 ^{***}	0.238 ^{***}			0.220 ^{***}	0.234 ^{***}
Father beat mother in childhood			[0.162,0.259] 0.164 ^{***}	[0.190,0.286] 0.133 ^{***}			[0.166,0.273] 0.165 ^{***}	[0.183,0.286] 0.129 ^{***}
Partner uses alcohol/drugs			[0.113,0.215] -0.039	[0.083,0.184] -0.003			[0.112,0.218] -0.017	[0.075,0.182] -0.013
Condomes wife beating			[-0.090,0.013] 0.159 ^{***}	[-0.058,0.052] 0.119 ^{***}			[-0.070,0.035] 0.201 ^{***}	[-0.071,0.045] 0.159 ^{***}
Lifetime sexual violence			[0.098,0.219] 0.246 [*]	[0.056,0.181] 0.334 [*]			[0.136,0.267] 0.201 [*]	[0.091,0.228] 0.372 [*]
Constant	0.475 ^{***} [0.383,0.567]	0.531 ^{***} [0.382,0.679]	0.246 [*] [0.101,0.392]	0.334 [*] [0.042,0.627]	0.390 ^{***} [0.296,0.484]	0.523 ^{***} [0.377,0.668]	0.201 [*] [0.050,0.353]	0.372 [*] [0.069,0.674]
Fixed effects	Health Zone	Health Zone	Health Zone	Village	Health Zone	Health Zone	Health Zone	Village
Observations	1680	1677	1677	1677	1419	1417	1417	1417
R ²	0.046	0.068	0.162	0.295	0.059	0.121	0.229	0.375

Robust clustered SE at village level

* p<0.05, **p<0.01, ***p<0.001

Sexual Violence Analysis

Displacement and Sexual Violence

The sexual violence analysis drew on the full sample of women (n=2,120), unlike the IPV analysis which was restricted to ever-partnered female respondents. Of the women who took the survey, 20% (n=434) reported experiencing sexual violence in their lifetime, and 14.6% of women (n=310) reported experiencing sexual violence in the past year.

It is possible that some women who reported sexual violence could have been referring to sexual violence perpetrated by a partner. A follow-up question asked women about who perpetrated this

violence. Analysis of these answers shows that sexual violence was often reported as distinct from partner violence. Women who reported lifetime sexual violence were also asked to report who perpetrated this violence the first time this violence occurred, with the option of selecting more than one type of perpetrator. Nearly 57% of women' stated it was a friend or acquaintance, 19% stated it was a non-parental relative, 9.4% reported sexual violence by a stranger, and 7.7% reported sexual violence by a family friend. Women could also select "other" and specify. Ten women selected "other" and stated that the perpetrator was a former or current partner. While this measure does not perfectly distinguish between partner and non-partner sexual violence, the analysis of the perpetrators of this violence makes it likely that in this context, sexual violence largely measures a construct that is distinct from IPV (See Table A3).

This section explores how displacement and conflict-related abuses are associated with sexual violence (Table 7). Women who have experienced displacement are nearly 8.6% ($p < 0.001$) more likely to also experience sexual violence at some point in their lives in the final model adjusting for health zone effects. The association is even higher (10%, $p < 0.001$) when adjusting for village level effects. The risk remains almost as high for past-year sexual violence. When adjusting for health zone effects, the risk of past-year sexual violence was 6% higher ($p < 0.05$), which strengthened to 7.7% when adjusting for village-level effects ($p < 0.001$).

Table 7. Stepwise Model of Association between Displacement with Lifetime and Past-year Sexual Violence

	(1) Lifetime sexual violence	(2) Lifetime sexual violence	(3) Lifetime sexual violence	(4) Lifetime sexual violence	(5) Sexual violence past 12m	(6) Sexual violence past 12m	(7) Sexual violence past 12m	(8) Sexual violence past 12m
Displaced at any point	0.074*** [0.036,0.112]	0.092*** [0.054,0.131]	0.086*** [0.048,0.124]	0.097*** [0.053,0.141]	0.055* [0.018,0.091]	0.066*** [0.029,0.103]	0.060* [0.024,0.097]	0.077*** [0.034,0.119]
Age		-0.004*** [-0.005,-0.002]	-0.003*** [-0.005,-0.002]	-0.004*** [-0.005,-0.002]		-0.003*** [-0.004,-0.001]	-0.002* [-0.004,-0.001]	-0.002* [-0.004,-0.001]
Received any education		-0.015	-0.006	-0.021		-0.007	0.001	-0.005
Married		[-0.055,0.025] -0.130*** [-0.192,-0.068]	[-0.046,0.033] -0.161*** [-0.228,-0.094]	[-0.062,0.021] -0.171*** [-0.233,-0.108]		[-0.043,0.030] -0.059* [-0.118,-0.001]	[-0.035,0.037] -0.089* [-0.150,-0.028]	[-0.045,0.034] -0.102*** [-0.162,-0.042]
Married in polygamous union		-0.051	-0.087	-0.096*		0.027	-0.008	-0.019
Divorced or widowed		[-0.146,0.044] -0.028	[-0.186,0.012] -0.048	[-0.186,-0.005] -0.043		[-0.062,0.116] 0.019	[-0.100,0.085] 0.000	[-0.106,0.069] -0.011
Employed in the past year		[-0.118,0.062] 0.053	[-0.139,0.042] 0.055	[-0.130,0.043] 0.063*		[-0.061,0.098] 0.057*	[-0.079,0.079] 0.062*	[-0.094,0.072] 0.077*
Head of household		[-0.004,0.109] -0.032	[-0.002,0.112] -0.036	[0.010,0.116] -0.046		[0.004,0.109] -0.033	[0.009,0.116] -0.038	[0.026,0.128] -0.035
		[-0.081,0.017]	[-0.082,0.011]	[-0.097,0.004]		[-0.079,0.012]	[-0.081,0.006]	[-0.083,0.013]

Number of children <18 in the home	-0.038	-0.035	-0.044		-0.007	-0.006	-0.014
	[-0.114,0.037]	[-0.110,0.040]	[-0.121,0.032]		[-0.075,0.060]	[-0.073,0.062]	[-0.085,0.058]
Asset score	0.000	-0.001	-0.004		-0.002	-0.004	-0.006
	[-0.011,0.011]	[-0.012,0.010]	[-0.015,0.007]		[-0.012,0.008]	[-0.014,0.007]	[-0.016,0.004]
Father beat mother in childhood		0.073***	0.082***			0.067***	0.072***
		[0.036,0.109]	[0.044,0.121]			[0.033,0.102]	[0.036,0.108]
Partner uses alcohol/drugs		0.118***	0.107***			0.117***	0.110***
		[0.082,0.155]	[0.071,0.143]			[0.084,0.149]	[0.077,0.143]
Respondent condones wife beating		-0.017	0.002			-0.006	0.008
		[-0.054,0.021]	[-0.038,0.043]			[-0.042,0.030]	[-0.031,0.047]
Constant	0.328***	0.550***	0.469***	0.276***	0.395***	0.316***	0.226*
	[0.271,0.385]	[0.427,0.673]	[0.352,0.587]	[0.151,0.642]	[0.221,0.331]	[0.281,0.509]	[0.208,0.425]
Fixed effects	Health Zone	Health Zone	Health Zone	Village	Health Zone	Health Zone	Village
Observations	2120	2064	2064	2064	1996	1946	1946
R ²	0.042	0.075	0.102	0.214	0.039	0.056	0.204

Robust clustered SE at village level

* p<0.05, **p<0.01, ***p<0.001

A sensitivity analysis was conducted to examine whether risk differed between women who were ever displaced (and subsequently returned home) versus women who were currently displaced (Table 8). The risk of lifetime sexual violence increased with previous displacement 11% (p<0.05) and current displacement 8% (p<0.05). Past-year sexual violence risk is also 8.5% (p<0.001) higher if a woman has been previously displaced, but this association does not reach significance for currently displaced women. It is worth noting that the sample size for currently displaced women who also report past-year sexual violence is relatively small (n=68) and this may have affected the model's ability to detect significance.

Table 8. Stepwise Model of Association between Current versus Former Displacement with Lifetime and Past-year Sexual Violence

	(1) Lifetime sexual violence	(2) Lifetime sexual violence	(3) Lifetime sexual violence	(4) Lifetime sexual violence	(5) Sexual violence past 12m	(6) Sexual violence past 12m	(7) Sexual violence past 12m	(8) Sexual violence past 12m
Previously displaced	0.078***	0.096***	0.091***	0.110***	0.056*	0.069***	0.063*	0.085***
	[0.039,0.118]	[0.056,0.136]	[0.051,0.131]	[0.065,0.155]	[0.018,0.093]	[0.030,0.107]	[0.025,0.102]	[0.041,0.128]
Currently displaced	0.102*	0.124***	0.109*	0.079*	0.072*	0.081*	0.067*	0.052
	[0.033,0.171]	[0.055,0.193]	[0.042,0.176]	[0.006,0.153]	[0.011,0.133]	[0.018,0.143]	[0.007,0.128]	[-0.018,0.122]
Age		-0.004***	-0.003***	-0.004***		-0.003***	-0.002*	-0.002*
		[-0.005,-0.002]	[-0.005,-0.002]	[-0.005,-0.002]		[-0.004,-0.001]	[-0.004,-0.001]	[-0.004,-0.001]
Received any education		-0.015	-0.006	-0.020		-0.007	0.001	-0.005
Married		[-0.055,0.024]	[-0.046,0.033]	[-0.061,0.022]		[-0.043,0.030]	[-0.035,0.037]	[-0.044,0.034]
		-0.132***	-0.162***	-0.169***		-0.061*	-0.089*	-0.101*
		[-0.194,-0.069]	[-0.229,-0.094]	[-0.232,-0.106]		[-0.119,-0.002]	[-0.151,-0.028]	[-0.161,-0.040]
Married in polygamous union		-0.050	-0.086	-0.094*		0.027	-0.007	-0.017
		[-0.144,0.045]	[-0.184,0.013]	[-0.184,-0.003]		[-0.062,0.116]	[-0.100,0.085]	[-0.104,0.071]
Divorced or widowed		-0.031	-0.050	-0.042		0.017	-0.001	-0.008
		[-0.121,0.059]	[-0.141,0.041]	[-0.129,0.045]		[-0.063,0.096]	[-0.080,0.078]	[-0.091,0.075]
Employed in the past year		0.052	0.055	0.062*		0.056	0.062*	0.076*
		[-0.004,0.109]	[-0.002,0.112]	[0.009,0.115]		[0.004,0.109]	[0.009,0.116]	[0.025,0.127]
Head of household		-0.031	-0.035	-0.048		-0.033	-0.037	-0.037
		[-0.080,0.017]	[-0.081,0.011]	[-0.098,0.002]		[-0.078,0.013]	[-0.081,0.006]	[-0.085,0.011]
Number of children <18 in the home		-0.041	-0.037	-0.044		-0.008	-0.006	-0.013
		[-0.116,0.035]	[-0.111,0.038]	[-0.120,0.032]		[-0.076,0.059]	[-0.073,0.061]	[-0.085,0.058]

Asset score	0.001	-0.001	-0.004	-0.002	-0.004	-0.007		
	[-0.010,0.012]	[-0.012,0.010]	[-0.015,0.007]	[-0.012,0.009]	[-0.014,0.007]	[-0.017,0.004]		
Father beat mother in childhood		0.072***	0.081***		0.067***	0.071***		
Partner uses alcohol/drugs			[0.035,0.109]		[0.032,0.101]	[0.035,0.108]		
			0.117***		0.116***	0.110***		
Respondent condones wife beating			[0.081,0.154]		[0.083,0.149]	[0.077,0.142]		
			-0.017		-0.006	0.009		
Constant	0.324***	0.547***	-0.054,0.021]	-0.038,0.043]	0.274***	0.394***	-0.041,0.030]	-0.030,0.047]
	[0.267,0.380]	[0.424,0.670]	[0.350,0.585]	[0.151,0.640]	[0.219,0.329]	[0.280,0.508]	[0.208,0.424]	[0.003,0.450]
Fixed effects	Health Zone	Health Zone	Health Zone	Village	Health Zone	Health Zone	Health Zone	Village
Observations	2120	2064	2064	2064	1996	1946	1946	1946
R ²	0.044	0.078	0.104	0.216	0.039	0.057	0.089	0.205

Robust clustered SE at village level
* p<0.05, **p<0.01, ***p<0.001

War-Related Abuses and Sexual Violence

Women who faced any type of war-related abuse, compared to women who faced no abuses, were 8.5% more likely to experience lifetime sexual violence ($p<0.001$) and 7.6% more likely to experience this abuse in the past year ($p<0.001$) when adjusting for village-level effects. Similar to the displacement analysis, older age and being married versus single were protective, while being employed, having an abusive father and having a partner who uses drugs or alcohol were risk factors (Table 9).

Table 9. Stepwise Model of Association between War Experiences with Lifetime and Past-year Sexual Violence

	(1) Lifetime sexual violence	(2) Lifetime sexual violence	(3) Lifetime sexual violence	(4) Lifetime sexual violence	(5) Sexual violence past 12m	(6) Sexual violence past 12m	(7) Sexual violence past 12m	(8) Sexual violence past 12m
Exposure to war-related abuses (any versus none)	0.094***	0.103***	0.087***	0.085***	0.086***	0.093***	0.077***	0.076***
	[0.054,0.134]	[0.064,0.142]	[0.049,0.125]	[0.043,0.127]	[0.051,0.121]	[0.058,0.128]	[0.043,0.112]	[0.037,0.114]
Age		-0.004***	-0.003***	-0.003***		-0.003***	-0.002*	-0.002*
		[-0.005,-0.002]	[-0.005,-0.002]	[-0.005,-0.002]		[-0.004,-0.001]	[-0.004,-0.001]	[-0.004,-0.001]
Received any education		-0.017	-0.009	-0.025		-0.007	-0.000	-0.008
		[-0.056,0.022]	[-0.048,0.030]	[-0.066,0.017]		[-0.043,0.028]	[-0.036,0.036]	[-0.047,0.031]
Married		-0.128***	-0.158***	-0.169***		-0.058*	-0.088*	-0.102***
		[-0.189,-0.067]	[-0.224,-0.093]	[-0.232,-0.107]		[-0.116,-0.001]	[-0.148,-0.027]	[-0.162,-0.041]
Married in polygamous union		-0.051	-0.086	-0.095*		0.026	-0.008	-0.018
		[-0.144,0.043]	[-0.184,0.011]	[-0.185,-0.004]		[-0.062,0.114]	[-0.100,0.083]	[-0.105,0.069]
Divorced or widowed		-0.020	-0.040	-0.038		0.025	0.006	-0.007
		[-0.106,0.067]	[-0.128,0.048]	[-0.125,0.048]		[-0.052,0.101]	[-0.071,0.082]	[-0.090,0.076]
Employed in the past year		0.053	0.056	0.065*		0.056*	0.062*	0.077*
		[-0.002,0.108]	[-0.000,0.111]	[0.012,0.117]		[0.005,0.108]	[0.009,0.114]	[0.026,0.128]
Head of household		-0.035	-0.038	-0.048		-0.035	-0.039	-0.036
		[-0.083,0.012]	[-0.084,0.007]	[-0.098,0.002]		[-0.079,0.009]	[-0.081,0.004]	[-0.084,0.012]
Number of children <18 in the home		-0.040	-0.036	-0.047		-0.009	-0.006	-0.014
		[-0.116,0.035]	[-0.111,0.038]	[-0.124,0.030]		[-0.075,0.058]	[-0.072,0.060]	[-0.086,0.057]
Asset score		0.000	-0.001	-0.004		-0.002	-0.004	-0.006
		[-0.011,0.011]	[-0.012,0.010]	[-0.015,0.007]		[-0.012,0.008]	[-0.014,0.006]	[-0.016,0.004]
Father beat mother in childhood			0.071***	0.083***			0.066***	0.073***

Partner uses alcohol/drugs			[0.035,0.107] 0.112***	[0.045,0.121] 0.102***		[0.032,0.100] 0.110***	[0.037,0.109] 0.105***	
Respondent condones wife beating			[0.075,0.148] -0.015	[0.065,0.138] 0.004		[0.078,0.142] -0.005	[0.072,0.138] 0.009	
Constant	0.330*** [0.277,0.383]	0.557*** [0.434,0.680]	[-0.053,0.023] 0.482*** [0.364,0.600]	[-0.037,0.045] 0.406* [0.155,0.657]	0.272*** [0.221,0.322]	0.394*** [0.282,0.506]	0.321*** [0.214,0.429]	0.232* [0.002,0.462]
Observations	2120	2064	2064	2064	1996	1946	1946	
R ²	0.047	0.078	0.103	0.212	0.046	0.064	0.092	0.205

Robust clustered SE at village level

* p<0.05, **p<0.01, ***p<0.001

Displacement, War-Related Abuses and Intimate Partner Violence

We also want to examine whether the two main predictors in this analysis – displacement and war-related abuses – independently serve as risk factors for sexual violence. As with IPV, we see that exposure to war-related experiences and displacement each independently increases risk of lifetime and past-year sexual violence. Each risk factor increases a woman’s risk of lifetime sexual violence by 6% (p<0.05) even after adjusting for other risk factors. In the past-year model, displacement does not reach significance in the final model with health zone fixed effects, but both displacement and war-related abuses are significant in the village fixed effects model.

Table 10. Stepwise Model of Association between War Experiences and Displacement with Lifetime and Past-year Sexual Violence

	(1) Lifetime sexual violence	(2) Lifetime sexual violence	(3) Lifetime sexual violence	(4) Lifetime sexual violence	(5) Sexual violence past 12m	(6) Sexual violence past 12m	(7) Sexual violence past 12m	(8) Sexual violence past 12m
Displaced at any point	0.037 [-0.004,0.077]	0.055* [0.014,0.096]	0.057* [0.016,0.098]	0.075* [0.028,0.121]	0.017 [-0.020,0.055]	0.029 [-0.011,0.068]	0.031 [-0.008,0.070]	0.056* [0.012,0.100]
War-related abuses (any versus none)	0.080*** [0.037,0.123]	0.081*** [0.039,0.123]	0.064* [0.023,0.105]	0.064* [0.020,0.108]	0.080*** [0.043,0.116]	0.082*** [0.045,0.119]	0.066*** [0.029,0.102]	0.061* [0.020,0.102]
Age		-0.004*** [-0.005,-0.002]	-0.003*** [-0.005,-0.002]	-0.004*** [-0.005,-0.002]		-0.003*** [-0.004,-0.001]	-0.002* [-0.004,-0.001]	-0.002* [-0.004,-0.001]
Received any education		-0.015 [-0.055,0.024]	-0.007 [0.046,0.033]	-0.020 [-0.172***]		-0.006 [-0.043,0.030]	0.001 [-0.035,0.037]	-0.004 [-0.043,0.035]
Married in polygamous union (Ref: married in single union)						-0.060* [-0.118,-0.002]	-0.089* [-0.150,-0.028]	-0.103*** [-0.164,-0.043]
Divorced or widowed (Ref: married in single union)						0.025 [-0.063,0.113]	-0.009 [-0.101,0.083]	-0.020 [-0.107,0.067]
Employed in past year						0.022 [-0.056,0.100]	0.003 [-0.075,0.081]	-0.011 [-0.093,0.072]
Head of household						0.056* [0.004,0.108]	0.061* [0.008,0.114]	0.076* [0.025,0.127]
Number of children <18 in household						-0.035 [-0.079,0.010]	-0.039 [-0.081,0.004]	-0.036 [-0.084,0.012]
Asset count						-0.010 [-0.077,0.057]	-0.008 [-0.075,0.058]	-0.015 [-0.086,0.056]
Father beat mother in childhood						-0.002	-0.004	-0.006

		[-0.011,0.011]	[-0.012,0.010] 0.071***	[-0.014,0.007] 0.082***		[-0.012,0.008]	[-0.014,0.007]	[-0.016,0.004]
Partner uses alcohol/drugs							0.066***	0.072***
Condomes wife beating			[0.035,0.108] 0.112***	[0.044,0.120] 0.103***			[0.032,0.100] 0.110***	[0.035,0.108] 0.106***
Constant	0.318*** [0.263,0.373]	0.545*** [0.423,0.667]	[0.075,0.148] 0.470***	[0.067,0.139] 0.401*	0.266*** [0.213,0.319]	0.388*** [0.276,0.500]	[0.078,0.142] 0.316***	[0.073,0.139] 0.229*
Fixed effects	Health Zone	Health Zone	Health Zone	Village	Health Zone	Health Zone	Health Zone	Village
Observations	2120	2064	2064	2064	1996	1946	1946	1946
R ²	0.049	0.082	0.106	0.217	0.047	0.065	0.094	0.208

Robust clustered SE at village level

* p<0.05, **p<0.01, ***p<0.001

Discussion

Women living in Eastern DRC face horrifically high levels of past and ongoing abuse. The levels of both forms of GBV reported in this study are far above global averages. Both forms of war-related stress examined here— displacement and experiencing war-related abuses – were significantly associated with higher levels of IPV and sexual violence. Notably, both types of stressors each independently and significantly increased the risk of both forms of GBV. These results suggest that *both* displacement and experiencing conflict-related abuses independently serve as risk factors for high risk of GBV among women in this study.

Intimate Partner Violence Results

Currently-displaced women had nearly 20% higher risk, and ever-displaced women had 8% higher risk, of past-year IPV compared to never-displaced women. The risk of IPV among currently displaced women was nearly twice as high as ever displaced, but it is notable that experiences of displacement in the past continued to impact women’s risk of current IPV. Women exposed to any war-related abuses were 10% more likely to experience past-year IPV (p<0.01). When added to the same model, exposure to war-related experiences and displacement both independently increased risk of lifetime IPV and past-year IPV. Having been displaced at any point increases a woman’s risk of lifetime and past-year IPV by 6% (p<0.05) and experiencing war abuses increased risk of lifetime IPV by 9% (p<0.05).

We also find that previous exposure to sexual violence is a risk factor for IPV. These findings are in keeping with several studies in conflict settings, which find increased exposure to conflict or sexual violence can increase the risk of IPV (Ellsberg et. al, 2020a; Falb et. al, 2013, Kelly et al, 2018). Married women who experience sexual violence during conflict may have elevated risk of IPV because they have experienced stigmatizing events during war, and violence in the home is used as a form of punishment or a way to cope with shaming experiences (Albutt et al, 2016;

Kelly, 2011; Kelly et al, 2012; Kelly et al 2017). Men's own war related trauma can also mean they turn to violence as a negative coping mechanism and as a way to reassert a sense of power during instability (Gupta et al, 2009; Gupta et al, 2012). Younger and unpartnered women may be forced into abusive relationships due to being seen as otherwise unmarriageable (Ellsberg et. al., 2020a).

Multiple studies, including among Congolese refugees, find that destabilization of gender norms in displacement settings may be associated with increased IPV (Wachter et. al, 2017; Ager et. al, 2018; Cardoso et. al, 2016; Wako et. al, 2015). Displacement often causes women to be separated from family and support networks, which may leave them more vulnerable to abusive relationships (Wachter et. al, 2017; Cardoso et. al, 2016). Displacement also leads to a variety of stressors, such as men's unemployment and a family's economic loss, that have been found to contribute to IPV risk (Feseha et. al, 2012; Cardoso et. al, 2016). Relatedly, this study found that a higher wealth score was a protective factor among displaced women. A partner's use of alcohol or drugs is another common risk factor (Feseha et. al, 2012; Wachter et. al, 2017; Tlapek, 2015); this too was borne out in the results of this study.

Predictors of IPV are often discussed as an ecological framework in which violence results from the interaction of factors at the demographic, societal, communal, interpersonal, and individual levels (Stark et. al, 2017). This study points to several structural factors that increase women's risk for IPV in Eastern Congo. Like multiple previous studies, the results here show an association between IPV and having a father who was violent toward a mother, and having more permissive attitudes towards violence one's self (Feseha et. al, 2012; Logie et. al, 2019). This suggests that an attitude of acceptance or normalization of household violence, either at the community or the individual level, creates additional risk (Ellsberg et. al, 2020; Ager et. al, 2018; Tlapek, 2015). Being in a forced or polygamous marriage has also been found to increase a woman's risk for IPV (Wachter et. al, 2017; Ellsberg et. al, 2020), as has being in a relationship based on control and unequal power (Logie et. al, 2019). For both lifetime and past-year IPV, being in a polygamous union was an IPV risk factor in this study, as was having more children, while being head of household was protective.

Sexual Violence Results

Similar results emerged when looking at sexual violence. Both currently and formerly displaced women had elevated risk of sexual violence compared to their never-displaced counterparts. Women who faced any type of war-related abuse, compared to women who faced no abuses, were nearly 8% more likely to experience lifetime and past-year sexual violence ($p < 0.001$). When both exposure to war-related experiences and displacement are added to the analysis, we find that each independently increases the risk of lifetime and past-year sexual violence by 6% ($p < 0.05$), even after adjusting for other risk factors.

Notably, we find that armed actors are not the most commonly cited perpetrators of sexual violence in this study population – even though this survey was conducted in two of the most conflict-affected areas in DRC. While much attention has rightly focused on the conflict-related sexual violence in DRC, it is important to also acknowledge that much of the abuse that women face comes from people in their immediate environment. Less than 10% of the perpetrators were armed actors. Women were far more likely to experience abuse at the hands of acquaintances, family members and people in their community.

Both displacement and conflict-related abuses were significantly associated with sexual violence in this study. Many actors have documented widespread armed attacks on civilians in Eastern Congo that include the use of sexual violence (United Nations, 2021; Department of State, 2019; Peterman et al., 2011; VanRooyen et al, 2010). In our sample, women who were displaced by one or more attack may have experienced sexual violence during those attacks. When asked to identify the perpetrators of sexual violence, the majority stated it was a friend, acquaintance, or non-parental relative, and close to one-tenth identified a stranger. This finding points to conflict-related sexual violence as is an indication of underlying gender inequalities that are aggravated by conflict-related breakdown of social institutions and norms (Swaine et al., 2019; HRW, 2009). It also reflects the extensive literature showing that women experience sexual violence while displaced, being cut off from normal social structures or forced into a position of vulnerability (Lugova et. al., 2020; Wachter et. al, 2017; Cardoso et. al, 2016).

Moreover, while the ecological framework is most commonly used to explain IPV risk, this study suggests that some of same risk factors apply to non-partner sexual violence. Women who had an abusive father were more likely to have experienced either lifetime or past-year sexual violence by

a non-partner, suggesting that community and family structures that normalize or exhibit violence are associated with more violence victimization [Heise, 1998; Swaine et al, 2019]. Displaced women who had a partner who used alcohol or drugs also had a higher risk for either lifetime or past-year sexual violence. Being employed in the past year was also a risk factor for non-partner sexual violence, while older age and being married versus being single were protective.

Programmatic Implications

This paper is among the first population-based surveys to document the relationship between both displacement and conflict-related abuses by armed groups on the one hand, and sexual violence and IPV on the other. This research contributes to the emerging evidence that political instability is linked to GBV risk, from places as diverse as Côte d'Ivoire, Myanmar, Uganda and Afghanistan (Annan & Brier, 2010; Catani et al., 2008; Clark et al., 2010, Falb et al., 2013a; Gupta et al., 2012; Hossain et al., 2014; Saile et al., 2013).

These findings have clear implications for programming. The correlation between experience of conflict-related abuses – whether exploitation by armed groups, displacement, or both – and GBV suggests that post-conflict programming provides a key opportunity to short circuit this cycle of violence and to address its consequences for war-affected women. As of 2019, 68.5 million people around the world were forcibly displaced because of conflict or violence; between 2000 and 2017, the number of internally displaced persons (IDPs) doubled from 20 million to 40 million while the number of refugees rose from 18 million to 25.4 million (World Bank, 2019).² Multilateral and bilateral donors dedicate billions of dollars to countries in conflict each year. The World Bank has recently instituted a group focused on Fragility, Conflict, and Violence, and USAID has initiated three new bureaus focused on conflict prevention and stabilization, humanitarian assistance, and resilience programming. Given that reducing violence against women is a key development goal, not only a humanitarian one, there is scope for closer collaboration with development practitioners to support governments and nongovernmental organizations (NGOs) in addressing the needs of IDPs (SDG 5).

² https://ieg.worldbankgroup.org/sites/default/files/Data/Evaluation/files/Forced_Displacement.pdf

The shift to a greater focus on, and corresponding increased budget towards, contexts in which conflict-affected and displaced people will be present is an important opportunity to integrate programming to disrupt cycles of violence.

By finding significant associations between displacement, conflict experiences, sexual violence, and IPV, this study supports the idea that programming to address violence against women occurs at multiple levels in conflict and post-conflict settings - including the community, family and individual levels (Swaine et al., 2019). Interventions that promote positive change in gender equitable attitudes among boys and girls have had some success (Ellsberg et al., 2020b; Lundgren & Amin, 2014). A 2020 study found that engaging men to reduce IPV did not reduce the frequency of IPV, but it did improve relationship quality and men's behavior and attitudes toward violence (Vaillant et. al, 2020). Given that childhood abuse is a risk factor for IPV and sexual violence in later life, both for perpetrators and victims, parenting interventions and programming among youth who experienced child abuse have shown positive results (Lundgren & Amin, 2014). Most studies suggest that longer term investment and repeated exposure to ideas are necessary to achieve behavior change (Ellsberg et al., 2020b; Lundgren & Amin, 2014).

Another vicious cycle is relevant to the link between conflict and IPV: displacement and conflict-related abuses are themselves traumatic events, but psychological trauma itself may increase vulnerability to IPV (Vinck & Pham, 2013; Falb et. al, 2013). Findings from conflict settings throughout the world suggest that IPV may serve as an intense but unrecognized daily stressor that may help account for high levels of psychological trauma that previously were attributed solely to war (Miller et al., 2010). A survey on the Thai-Burma border highlights that both domestic and conflict-related stressors can harm mental health, but are most pernicious when these stresses overlap (Falb et al., 2013b).

Several types of programming aiming to break the link between the experience of trauma and the perpetration of violence have been tested over the last decade. Practitioners in the Central African Republic and Northeastern DRC found that community trauma healing was an essential first step to building social cohesion after long periods of insecurity and violence (Catholic Relief Services,

2016).³ Innovations in mental health provision to reach more of the population, either by using group therapy or by using virtual tools for traditional one-on-one therapy, are ongoing and could increase options for reaching remote populations.

Several types of programming that could break the link between the experience of trauma and the perpetration of violence have been under testing over the last decade. In the Great Lakes region of Africa, mental health interventions developed and deployed to treat war trauma may also reduce the perpetration of violence, including IPV. The world is now experiencing the largest displaced population ever – preventing and treating violence and its sequelae are vital to interrupting cycles of violence.

Conclusion

This study is among the first to document the deep-seated, persistent and pernicious links between GBV, displacement and other war-related traumas, using a large population-based survey conducted in a conflict setting. These results point to a pressing need to acknowledge that war-affected women, and particularly those who are displaced, are more likely to have experienced multiple forms of GBV. Abuses are not only perpetrated by armed actors, but by civilians, including family members. Women navigate a complex landscape of risk where multiple forms of violence are present – including war-trauma, domestic violence and sexual violence outside and within the home.

Our work contributes to a growing literature that suggests layered vulnerabilities, including displacement and conflict-related abuses, may interact and lead to higher rates of GBV than experiencing one event alone. The results presented here reinforce previous studies that find higher IPV risk in displacement. But they also indicate that the direct experience of conflict-related abuses is an additional risk factor, such as an armed group's destruction of a woman's home, looting, theft, abduction, beating, being forced to work, or being forced to hurt someone else.

³ https://www.crs.org/sites/default/files/tools-research/healing-personal-trauma-to-restore-communities_0.pdf

This work builds on previous scholarship that emphasizes how extremely high rates of IPV can indeed be one of the most pervasive and invisible forms of abuse women face in fragile contexts. Notably, growing up in a violent home is a key risk factor for abuse. This finding emphasizes the cyclical nature of violence, particularly in contexts facing high levels of violence in multiple forms. A robust literature documents how exposure to violence during childhood can increase the risk for both perpetration and victimization later in life.

Post-conflict programming provides a key opportunity to ‘short circuit’ the cycle of violence. Multilateral and bilateral donors as well as NGOs spend billions of dollars to improve the lives of those living in conflict-torn and post-conflict countries every year. Within this programming, a number of donors are not only placing emphasis on providing basic goods to war-affected populations, but also confronting the myriad ongoing challenges and risks that present themselves. Acknowledging, preventing and addressing violence must be primary among the priorities for development practitioners.

Declaration of interest statement: The authors declare no conflict of interest.

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APPENDIX

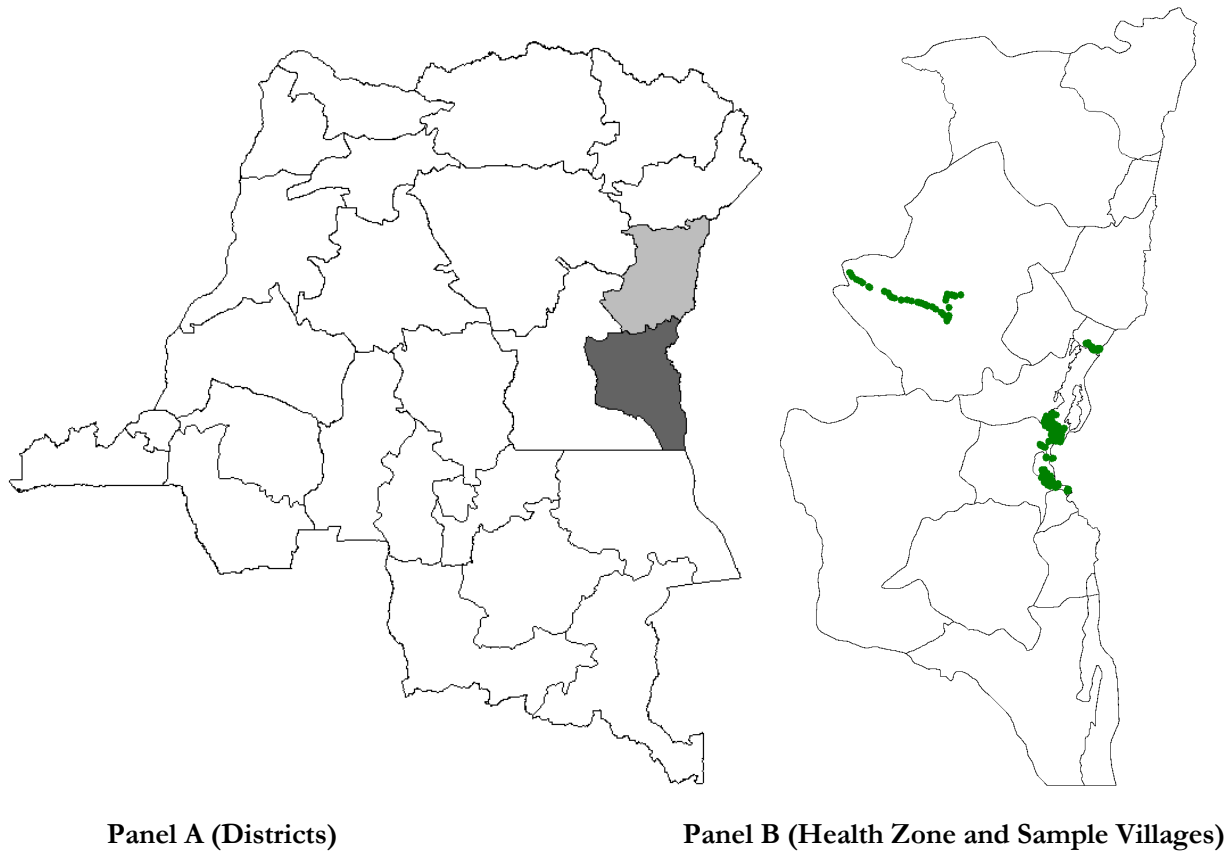


Figure A1 Administrative Boundaries and Study Sample

Notes: Map of Democratic Republic of Congo with Districts (Panel A) and Health Zones with Sample Villages (Panel B)

Table A1. Comparison of Study sample with Congolese population

		DRC	Study sample
<i>Age</i>	Age	28%	29%
<i>Education attainment</i>	No education	18%	59%
	Primary	36%	31%
	Secondary	42%	10%
<i>Marital status</i>	Single	29%	14%
	Married/cohabiting	42%	68%
	Divorced/separated/widowed	27%	15%
<i>Primary water source</i>	Public tap	68%	48%
	Protected well	23.5%	3%
	Unprotected well/ River/stream	41.7%	37%
	Other	0.3%	1%

Notes: Data are from female respondents, n = 2120. Data for DRC come from the 2013/4 Demographic and Health Survey, which covers women aged 15-59 years.

Table A2 Descriptive Statistics

Variable	Obs	N or mean	Frac. or SD	Min	Max
Lifetime IPV (ever married women)	1,680	963	0.57	0	1
IPV, past 12 months	1,670	953	0.57	0	1
Lifetime Sexual Violence	2,120	434	0.20	0	1
Sexual violence, past 12 months	1,996	310	0.16	0	1
Displaced	2,120	1,100	0.52	0	1
War exposed	2,120	1,066	0.50	0	1
Physical Violence	2,120	595	0.28	0	1
Severe Economic Loss	2,120	1103	0.52	0	1
Age	2,120	32.76	13.48	18	90
Children under 18 in the household	2,120	1,991	0.94	0	1
Head of household	2,120	527	0.25	0	1
No education	2,115	1255	0.59	0	1
Assets count	2,120	3.00	1.80	0	10
Working in past year	2,120	328	0.15	0	1
Single	2,120	311	0.15	0	1
Married/cohabiting	2,120	1,290	0.61	0	1
Married polygamous	2,120	143	0.08	0	1
Divorced or widowed	2,120	325	0.18	0	1
Partner uses alcohol or drugs	2,120	994	0.47	0	1
Father beat mother / respondent in childhood	2,120	1,249	0.59	0	1
Respondent condones wife beating	2,120	1,603	0.76	0	1
Walikale	2,120	538	0.25	0	1
Nyangezi	2,120	445	0.21	0	1
Katana	2,120	784	0.37	0	1

Notes: data are from female survey respondents in 195 villages in Eastern DRC during September - October 2018. In each village 20 people were randomly selected, half of which were women.

Table A3: Perpetrators of sexual violence

Father	6	1
Mother	6	1
Stepfather	3	0.5
Stepmother	1	0.16
Other relative	113	18.6
In-law	0	0
Own friend / acquaintance	344	56.7
Family friend	47	7.7
Teacher	16	2.6

Employer / someone at work	5	0.8
Police	1	0.2
Government official or worker	3	0.5
FARDC	7	1.2
Member of armed group	32	5.3
Priest / religious leader	0	0
Stranger	57	9.4
Other, specify*	38	6.3
Don't know/refused	6	1

* 10 women specified current or former partner, as specified in "other" (1.6%) of women