## ORIGINAL ARTICLE

# Young-age exposure to armed conflict and women's experiences of intimate partner violence

## Orsola Torrisi

Department of Social Policy, The London School of Economics, London, UK

**Correspondence**
Orsola Torrisi, Department of Social Policy, The London School of Economics, Houghton Street, London WC2A 2AE, UK.
Email: o.torrisi@lse.ac.uk

## Abstract

**Objective:** This study examines the legacy of experiencing armed conflict in childhood and adolescence on women's later risk of intimate partner violence (IPV) in four ex-Soviet countries.

**Background:** Prior research is largely concerned with male soldiers and perpetration, and rarely considers when, during the life course, conflict occurs. This study focuses on civilians, women's victimization and pays attention to the age at conflict exposure. This aspect is crucial to understand if war has lasting consequences for family violence, beyond contemporaneous effects. This paper further contributes by providing insights on driving mechanisms.

**Method:** The study combines cross-national data on IPV from the Demographic and Health Surveys ($N = 17,787$) and geo-referenced conflict information from the Uppsala Conflict Data Program. Using linear models with fixed effects, it compares the IPV outcomes of women exposed to conflict before the end of their teens with nonexposed peers and older women.

**Results:** Young-age conflict exposure is associated with greater adult IPV risk. Childhood exposure (ages 0–10) matters the most, especially for physical forms of IPV. Results are not driven by migration. Analyses of potential pathways show no relationship between war and changing marriage market conditions, or attitudes towards IPV in women. Conversely, men experiencing conflict in late adolescence (16–19) are more likely to condone violence against partners. Furthermore, women's childhood exposure to conflict correlates with having a violent father.

**Conclusion:** War in young-ages has long-term implications for family violence. These appear in part related to greater

exposure to family violence, and to a normalization of the use of violence in future potential perpetrators.

## INTRODUCTION

Armed conflict and intimate partner violence (IPV) are among the most widespread and severe forms of violence, and women and children are especially vulnerable (Heise & Garcia-Moreno, 2002; Kadir et al., 2019). Not only both types of violence account for a significant burden of mortality and morbidity worldwide, but their adverse consequences are often protracted, extending beyond the health and well-being of victims to communities and future generations (Devries et al., 2013; Ghobarah et al., 2003).

Although there is evidence that war exacerbates IPV, most comes from research on military personnel returned from deployment and thus generally reflects men's experiences and perpetration (Galovski & Lyons, 2004; Taft et al., 2011). Only recently research has started to focus on civilian populations—the overwhelming majority of those affected by war—and on IPV victims, documenting a correlation between levels of armed violence and women's domestic victimization (Kelly et al., 2018; La Mattina, 2017; Østby, 2016; Svallfors, 2021). Some studies even suggest IPV to be the most prevalent form of gender-based violence in conflict settings (Stark & Ager, 2011; Swaine, 2015). This shift in focus is significant for two reasons. First, by hinging on victims' reporting, which is typically more reliable than perpetrators' (Anderson, 2013; Armstrong et al., 2002), these studies draw attention to the most vulnerable, namely those women at risk of double-victimization—from conflict and from partners—and to cumulative trauma. Second, their findings suggest a spread of violence across social spaces in war-affected civilian populations, beyond those directly involved in combat. However, this novel research strand has focused primarily on the co-occurrence of IPV and armed violence, leaving much unknown about plausible drivers and on *how long* this relationship may last.

In this regard, considering *when* over the life-course conflict happens is crucial because the age at exposure to shocks matters, particularly when traumatic events occur in childhood and adolescence. Ample research on the determinants of IPV has shown that victimization in adult unions is greater when victims have experienced other kinds of violence (e.g., within the family, in schools and neighborhoods) in early life (Bandura, 1977; Widom, 1989). It also is well-established that the consequences of war are particularly profound when conflict stressors occur in developmental ages, with girls and boys suffering harm that persists long after the fighting has ceased (Kadir et al., 2019; Heise & Garcia-Moreno, 2002). Examining the link between armed and domestic violence with a focus on the ages at war exposure is thus necessary to understand the lasting consequences of conflict on the family domain, beyond contemporaneous relationships. Put differently, to know if IPV is another long-term by-product of war. Shedding light on this is vital for structuring timely interventions, and for achieving human security, peace, and gender equality.

This study provides a first systematic examination of the relationship between conflict exposure in "sensitive" ages and women's adult IPV risk, exploiting the armed confrontations that occurred soon after the USSR dissolution in Armenia, Azerbaijan, Moldova, and Tajikistan. These countries have a similar conflict history, with wars happening simultaneously and affecting the same cohorts. Their populations further shared the same pre-independence institutional background and social-value system. Importantly, all four countries have been indexed by human rights organizations as having the highest IPV levels in Eurasia and major deficits in related legislations (Amnesty International, 2008, 2009; Human Rights Watch [HRW], 2019). Yet, research on IPV here remains scarce, especially in its links with war violence.

In addition, of the only two studies (both unpublished) that have discussed the age at war exposure in relation to women's IPV risk, one provided deep, but context-specific evidence of greater domestic victimization associated with young-age conflict exposure (Gallegos & Gutierrez (2016) on Peru); the other evaluated the relationship with cross-country data on contexts with diverse backgrounds and conflict typologies (La Mattina and Shemyakina (2017) on sub-Saharan Africa), and measured conflict exposure with broad region-level indicators, which may mask a good amount of heterogeneity in women's actual exposure to war. Using high-quality and comparable data for cross-national analyses, this study improves prior research on this topic by constructing narrower conflict measures that permit to test if close exposure to conflict events, not (only) diffused regional instability, is predictive of future victimization. Understanding if proximity to war matters for long-term outcomes matters to identify plausible pathways and for the development of strategies that can break these associations. In this sense, this article further contributes by considering the role of men, including changes in their behavior as fathers in wartimes and in attitudes towards IPV as partners following conflict exposure, as potential mechanisms driving the relationship between women's young-age conflict exposure and later IPV victimization.

I combine cross-country data on IPV from available Demographic and Health Surveys and geo-referenced information on armed conflict from the Uppsala Conflict Data Program (UCDP). Using linear models with fixed effects and exploiting cohort and geographic variation in war exposure, I find that women exposed to conflict by age 19 are more likely to experience IPV than those never exposed and nonexposed by age 19. Further analyses reveal that the result is driven by conflict exposure in childhood ages (0–10). Here, the link is particularly pronounced for physical forms of IPV. Findings are equivalent for lifetime and past-year IPV, suggesting that the imprints left by conflict may not wane much over time. They are also robust to several checks, consistent at the country-level and are not driven by selective migration.

Analyses of testable mechanisms show that neither conflict-related changes in marriage market conditions (education, marriage timing, spousal age difference) nor in attitudes towards domestic violence in women exposed to war when young explain the results. Conversely, I find that women exposed to conflict in childhood are more likely to have a violent father, and that war correlates with views condoning IPV in men who experienced armed violence in their late teens (16–19). Taken together, these findings not only confirm that war can have "immediate" adverse implications for men's behavior in the domestic realm; they also suggest that, when conflict violence is experienced at young ages, it can carry lasting consequences on men's attitudes towards IPV, "normalizing" the use of aggressive behavior as a standard resolution strategy for private adult disputes. In turn, this can exacerbate women's risk of victimization.

This study broadens our theoretical knowledge on the long-term consequences of war on individuals, the family and society at large, which so far overlooked implications for family violence and the formation of attitudes towards IPV. It further expands our understanding of how proximal and early-age exposure to shocks together influence later-life outcomes, and casts light on women's risk of double-victimization and cumulative trauma. Results are also policy-relevant in that they suggest that interventions targeting very young girls and adolescent boys affected by war, as well as their (male) caregivers may be promising to prevent IPV and interrupt "cycles" of violence.

## BACKGROUND

### Armed conflict and IPV: What relationship?

Exposure to war has been related to later violence in intimate relationships. Yet, evidence mostly comes from studies on combatants returned from deployment. As such, it focuses on

future perpetration and on men, who are more likely to both serve in armies and commit violent acts against partners (Cesur & Sabia, 2016; Galovski & Lyons, 2004). Research on civilian populations (which may include some ex-soldiers) and victimization is scarcer, though increasingly studies show a positive correlation between levels of armed and domestic violence in some conflict and post-conflict settings (Ekhator-Mobayode et al. (2022); Kelly et al. (2018); La Mattina (2017); Østby (2016) in sub-Saharan Africa; Noe and Rieckmann (2013); Svallfors (2021) in Latin America).

This emergent line of scholarship has the merit of having drawn attention to civilians and to women's risk of double-victimization—the first due to exposure to conflict and the second to abuse within the home during/after war. Moreover, it offers supporting evidence on the transmissibility of violence across social spaces (Dubow et al., 2010; Kelly et al., 2018). Essentially though, most existing studies capture the co-occurrence of both forms of violence or early post-war correlations. Thus, due to their designs and focus on establishing a general association, they do not consider the age at conflict exposure and, therefore cannot ascertain any potential long-term effect.

The age at exposure to violence is, though, salient when it comes to IPV. Ample literature indicates young-age experiences of various forms of violence other than war—including in the parental house, schools, and local communities—as harbingers of "cycles of violence" and as strong determinants of one's future risk of IPV victimization and/or perpetration (Arata, 2000; Bandura, 1977; Desai et al., 2002; Widom, 1989). As armed conflict is a highly pervasive and disruptive form of violence, there are theoretical reasons to hypothesize that young-age exposure to war may as well have lasting implications for IPV outcomes (Dubow, 2013).

To date, two studies only have approached the relationship considering the ages at war exposure. In Peru, Gallegos & Gutierrez (2016) found that women who resided in conflict areas when aged 0–16 had an elevated risk of domestic victimization in later life compared to those who were not exposed to conflict violence. La Mattina and Shemyakina (2017), pooling data from sub-Saharan Africa and measuring conflict with a broad region-level indicator, documented higher adult IPV rates for women who lived in war-affected regions between ages 6 and 10. These findings provide small, but valuable indications on the long-term link between the two types of violence, and on which relationship we can expect elsewhere.

## What may explain the link?

Many possible interrelated pathways may explain why conflict violence experienced in early ages can have implications for later victimization in the home (Heise, 1998). First, armed conflict may increase known individual-level predictors of IPV (Gibbs et al., 2020). Wars expose girls to a myriad of stressors either as witnesses, perpetrators and/or victims. These experiences often leave scars on mental health and cause lasting post-traumatic stress that can elevate their future risk of IPV. For example, re-experiencing symptoms of post-traumatic stress disorders may trigger strong negative affects, causing war victims to be aggressive towards partners, which in turn increases their risk of victimization (Kuijpers et al., 2012). Alternatively, symptoms of emotional numbing can increase the likelihood of victimization by inhibiting negative feelings, for example, anticipatory anxiety connected to threat cues, and thus may impede risk recognition and reaction to dangers (Jewkes, 2002; Krause et al., 2006). Conflict-related trauma can prompt maladaptive coping mechanisms, for example, alcohol and substance misuse, in adult life (Brecklin, 2002; Lo et al., 2017). These health behaviors are known risk factors for violence perpetration, but research has shown that they can also increase women's vulnerability to victimization due, for example, to greater likelihood of finding partners with similar consumption patterns and, again, to impaired cognition and weakened capacity to distinguish dangerous situations (Felson & Burchfield, 2004; Nowotny & Graves, 2013; Testa &

Livingston, 2009; Weinsheimer et al., 2005). Armed violence also worsens girls' educational outcomes due to infrastructure disruption and security concerns (Kadir et al., 2019). Reduced education can then negatively affect knowledge and attitude formation, as well as women's participation in income generating activities, thereby raising their chances of having and staying in abusive relationships (Anderberg et al., 2016; Heise & Garcia-Moreno, 2002).

Another key route may run through increased exposure to family violence. As mentioned above, prior work has shown that levels of conflict violence are simultaneously related to increasing IPV (e.g., Kelly et al., 2018). At the same time, life course research and sociological studies on family violence argue that, since the natal family is often girls' first focal unit of socialization, early exposure to parental violence can "corrupt" their cognitive schemas about the role of violence in future intimate unions them, elevating their risk of victimization in adult private relationships (Cappell & Heiner, 1990; Pollak, 2002; Putney & Bengtson, 2002). In this regard, childhood appears to be the critical period for lasting harm because of the limited means infants and young girls possess to avoid and deal with the shock at exposure time, while also being highly dependent on the abuser for survival (Gustafsson et al., 2016; Holt et al., 2008). Hence, if war makes parents more prone to use force against each other or their daughters, there is reason to expect that violence may spread intergenerationally, especially for women experiencing both armed and familial violence in early ages.

As IPV is an inherently relational event, these factors are likely magnified at the couple-level and influenced by the community characteristics where unions are form (Behrman & Frye, 2021). For instance, if conflict-related education losses or mortality in a community hit boys hardest, this may generate a "surplus" of women facing a smaller group of prospective grooms of equivalent age/education and greater competition in the marriage market. Imbalances in sex-ratio and/or educational attainment may elicit early unions and reduce match quality, with consequences for women's intra-household bargaining power, marital discord and IPV (La Mattina, 2017). Conflict-affected women may also marry men who were too exposed to conflict in young-age. If these men suffer from conflict-related poor mental health, for the presented reasons above, they could be more likely to be violent against their female partners (Taft et al., 2011).

The extent to which the above channels unfold finally relates to how armed conflict shapes the broader social environment. The erosion of kindship structures and social networks, the deterioration of health infrastructures and judiciary systems that could otherwise deter interpersonal violence can increase women's vulnerability to IPV (Kelly et al., 2018). Conflict generates poverty, high and enduring unemployment, which have been linked to greater risk of interpersonal victimization (Schneider et al., 2016). Moreover, if conflict induces structural changes in traditional gender norms, men may resort to violence in the home to respond to their perception of power asymmetries in the society (Stryker & Macke, 1978).

A last macrolevel avenue bridging conflict and spousal violence springs from increased legitimization of the use of violence in the society. According to "cultural spillover theory," the more a society culturally endorses the use of force to attain its goals, the more this blurs the boundaries between legitimate/illegitimate actions, and allows violence to be justified in spheres of life where it would commonly be considered inappropriate, including the domestic realm (Baron et al., 1988; Straus, 1991). Exposure to war could then alter the normative understanding of (in) opportune social behavior and trigger "cultures of violence" where force is tolerated (Jewkes, 2002). This process can be expected especially when conflict exposure happens in key ages of physical and emotional development because, as "social learning theory" posits, violence is a learned behavior: once experienced in early life (either as a victim or witness), it is often carried onto adulthood and internalized as the conventional way to solve disputes, even in private relationships (Cappell & Heiner, 1990). In this sense, child development theory points at adolescence as a particularly susceptible period because it is at this life stage that attitudes and behavioral norms are deemed to develop, to then remain often fixed thereafter (Krosnick &

Alwin, 1989). In the context of male-to-female interpersonal violence, the legitimization can be expected to occur in two gender-specific ways. In male perpetrators, in the form of a "normalization" of violence, which makes aggression an adaptive behavior and the standard means to resolve private issues (Dodge et al., 1990; Dubow, 2013). In particular, given men's greater direct involvement and proximate confrontation with war violence, conflict exposure at young ages can encourage men to adopt violent models of masculinity, socialize them to view violent behavior as increasingly less inappropriate and eventually "neutralize" their natural barriers to acting violently, even against partners, later in life (Grossman, 2009; Mendelsohn & Straker, 1998). In female victims, violence legitimization can instead be expected to occur as a process of "desensitization" to abuse—a form nonassociative learning that lowers reaction to a stimulus after repeated exposure—which can escalate their vulnerability to re-victimization (Noe & Rieckmann, 2013).

Overall, given the scant empirical evidence on the relationship, my first aim is to determine as neatly as possible if experiencing conflict violence at young ages is associated with women's later IPV victimization. Next, although assessing all possible channels of this vicious "cycle" is not possible, I examine some to provide suggestive insights on entry points for intervention.

## THE CONTEXTS

### Armed conflicts in the post-Soviet space

The fall of the USSR led to the establishment of successor states often characterized by fluid borders and substantial ethno-linguistic diversity that, in three cases unleashed long-suppressed hostility.

The first major conflict emerged between Azerbaijan and Armenia over Nagorno-Karabakh, a mountainous region officially recognized as part of the former, but which the latter considers an Armenian historical area of residence (United Nations Security Council, 1993). The full-blown conflict began in 1992, when the separatist region proclaimed independence from Azerbaijan with Armenian support (HRW, 1992, 1994). Most fighting took place in and around the territories of the seceding region and at the borders between Armenia and Azerbaijan, whereas other areas in both countries remained largely untouched by violent events. Although no precise and independently verified figures exist, it has been estimated that the conflict claimed between 10 and 25,000 lives, including many conscripted men, and caused the displacement of over 750,000 (de Waal, 2018; HRW, 1992, 1994; Yunusov, 2002). An open-ended ceasefire was agreed in 1994, resulting in a de facto jurisdiction, the Republic of Karabakh (or Artsakh). Since then, the conflict has been described as "frozen" and intermittent intimidations still feature the relationship between the countries (de Waal, 2018).

A comparable separatist logic triggered the conflict between Moldova and the Russian-speaking enclave of Transnistria. After the Soviet dissolution, the Moldovan government declared Romanian as the official state language to promote Romanian identity and break with its Soviet past (Roper, 2001). Slavic and Russian-speaking groups in Transnistria opposed these initiatives, fearing loss of socio-cultural rights. Initial disagreement translated into all-out conflict in 1992 that, similar to Nagorno-Karabakh, terminated without a peace agreement, but only with a ceasefire and the breakaway region's self-declared independence (Commission on Security and Cooperation in Europe, 1993). Although fighting was localized near the banks of the Dniester River and was short in duration, it caused an estimated 500–2000 deaths, more than 50,000 displaced and infrastructural damage to roads and bridges that disrupted the country's already small internal market and put additional strain on its fragile economy (Internal Displacement Monitoring Centre, 2004; Gorelova & Şelari, 2009; UCDP, 2021; World Bank, 1998).

The third major conflict erupted in Tajikistan, the poorest among ex-Soviet republics. Here, an internecine struggle for state control between ethno-regional and clannish rival groups marred the country between 1992 and 1997, when peace accords between the opposing factions ended the war. Although here conflict violence spread across the country, its intensity varied across geographic areas with the Southern and Central regions being disproportionately affected (Falkingham, 2000). Children, and especially girls in these areas were often unable to attend school due to security concerns, leading to low illiteracy levels in the conflict-affected cohorts (Shemyakina, 2011). The war killed over 50,000 people, mostly male fighters, displaced more than 600,000 and exacerbated already widespread poverty (International Crisis Group, 2001).

All these conflicts occurred amid the dramatic political and socioeconomic transformations ushered by the Soviet collapse, which themselves alone influenced gender and family dynamics. In all four countries, the severe economic downturn pushed out women from (paid) economic activities, despite their high educational levels, while the burden of survival shifted primarily to the family unit (Falkingham, 2000; Heyat, 2014). Having to acclimate to their new national identities, post-Soviet families were further disoriented by the elimination of state-funded social services, on which women in particular relied for childcare provision in Soviet times (UNICEF, 1999). Importantly, the fall of the socialist regimes itself fuelled a revival of nationalist and conservative sentiments, while it also dismantled the idea of (formal) gender equality. Together, this led to a quick "re-domestication" of women and a restoration of patriarchal family values, to which then conflicts provided fuel (Gal & Kligman, 2000). For example, evidence suggests that in Armenia and Azerbaijan the war and its unsettled status further imbued these increasingly patriarchal post-Soviet societies with nationalist rhetoric celebrating male fighters as heroic "martyrs" and "protectors of national identities" and relegating the value of women to their role of wives and mothers of future defenders (Fertaly, 2018; Ishkanian, 2007). Similarly, it has been argued that the Tajik civil conflict accelerated and fed the re-emergence of conservative customs and traditional family arrangements during the process of post-Soviet nation-building, creating fertile grounds for greater community violence in communities and in the private realm (Heathershaw, 2009; Thibault, 2018).

Overall, although each conflict had its distinct dynamics in terms of duration, deaths, and violent events (Figure S1), all stemmed from the dysfunctionalities and collapse of the same socioeconomic institutions, erupted, and peaked in the same years of major socio-political transformations, leaving scars on the socializing behaviors of those affected.

## Intimate partner violence in former Soviet conflict-affected countries

Research on the prevalence and correlates of IPV in the former Soviet bloc is scarce, particularly in countries marred by post-independence conflicts. This lack of attention is likely due to limited data, a popular understanding of IPV as a private matter, and cultural factors, including tensions between patriarchal values and the Soviet equalizing ideals (Ismayilova, 2015; UNFPA, 2015).

Extant evidence from international agencies and research institutions though suggests that IPV represents a serious concern in these countries. According to regional research, more than a quarter of women in post-Soviet Eurasia report having experienced violence from partners at some point in life (Devries et al., 2013). The few existing national-level studies in the four conflict-affected countries in the area show similar values for Armenia, and higher estimates (about one third) for Azerbaijan and Moldova (Ismayilova, 2015; UN Women, 2016). The issue appears especially severe in Tajikistan, where more than half of ever-partnered women report some form of domestic abuse during the lifetime (Amnesty International, 2009). Alarming as these estimates appear, they likely represent a fraction of the real extent of IPV in these settings and their precursors, including conflict violence, are still under-researched (UNFPA, 2015).

# DATA AND MEASURES

## IPV data and outcomes

The Demographic and Health Surveys (DHS) are the primary data source for this study. These are nationally representative surveys collecting various demographic, health, and family information from every woman aged 15–49 in households identified at the sampling stage. Increasingly, the surveys include an IPV-focused module. This is administered to one randomly selected ever-partnered (married) woman in each household by a trained fieldworker via in-person interview, and asks questions that are comparable across countries and over time (Kishor & Johnson, 2005). Here, I combine into one dataset all available cross-sectional DHS collecting IPV data in the four countries of interest, namely one each from Armenia (2015), Azerbaijan (2006) and Moldova (2005), and two from Tajikistan (2012 and 2017). Data pooling allows for a larger sample with sufficient power to estimate associations for all forms of IPV. I also perform country-specific analyses to examine potential heterogeneity. The main sample comprises a total of 17,787 ever-partnered women. Nearly 45% comes from Tajikistan surveys (20% and 25%, respectively for 2012 and 2017), 21% from Moldova, 18% from Azerbaijan and 15% from Armenia (Table 1). Women with missing values on IPV-related questions (<2%) and born after the end of each conflict (n = 42) are excluded.

Alongside important background characteristics, women selected for the IPV-module are asked if they have experienced various types of violent behaviors from their current (or most recent) partner, including physical, sexual, and psychological abuse, ever and in the 12-months preceding the interview (Table S1 for detailed questions). I use this information to construct progressively narrower measures of IPV, following the approach used in DHS reports, in the WHO multi-country study on IPV (Garcia-Moreno et al., 2006) and in available studies of the association between armed and domestic violence (e.g., La Mattina & Shemyakina, 2017). The first outcome measures if the woman ever experienced one or more acts of abuse (physical, sexual, psychological) from her partner. This captures the broadest association between the two "ever" experiences of violence (i.e., experienced conflict in young-age and lifetime IPV). Next, I build a similar indicator, but measuring abuse the year before the survey. This is serves to examine whether the association holds in the most recent temporal interval, and as a check for recall bias on violence endured in the more distant past (Devries et al., 2013). I then create separate measures for each form of lifetime abuse (physical, sexual, and psychological). The former two are of special interest as considerably severe and damaging, and with more established connections to traumatic experiences of conflict violence (Straus et al., 2020). Finally, given that the IPV module asks women if they experience controlling behaviors from their partners (e.g., not being allowed to see friends/family, being repeatedly asked where they are), I generate an additional outcome variable for whether the woman reported at least one controlling behavior from her partner. This latter indicator is intended as supplementary, and explores another aspect of relationship quality that might constrain women's autonomy. Note that in no way I seek to rank or classify abuses, nor do I underestimate the harm of nonphysical assaults. For this reason, I examine all forms of IPV in their own right.

## Conflict data and indicators

To determine if a respondent experienced armed violence, I primarily rely on conflict information from the UCDP Georeferenced Event Dataset (UCDP-GED). This is a high-quality public dataset providing spatial coordinates on conflict events happening worldwide (Croicu & Sundberg, 2016).

**TABLE 1** Descriptive statistics for pooled and country-specific samples.

| Country | Survey year | N | % in pooled sample | Ever experienced IPV (%) | Past-year IPV (%) | Ever experienced (%) | | | | Conflict exposure (%) | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | | | | | Physical violence | Sexual violence | Psychological violence | Controlling behavior | Ever exposed | Ages | | | | |
| | | | | | | | | | | | 0–19 | 0–10 | 0–11 | 0–11 | 16–19 |
| Armenia | 2015 | 2724 | 15.31 | 9.58 | 6.19 | 4.25 | 0.57 | 7.49 | 44.61 | 9.35 | 6.96 | 3.81 | 3.66 | 3.15 |
| Azerbaijan | 2006 | 3186 | 17.91 | 11.49 | 10.26 | 8.51 | 1.78 | 4.44 | 84.41 | 12.04 | 5.76 | 1.73 | 3.42 | 4.03 |
| Moldova | 2005 | 3773 | 21.21 | 28.10 | 26.19 | 17.81 | 3.14 | 20.05 | 65.13 | 4.71 | 2.10 | 0.72 | 0.74 | 0.63 |
| Tajikistan | 2012 | 3646 | 20.51 | 24.22 | 20.51 | 15.49 | 4.26 | 11.23 | 76.01 | 60.12 | 51.30 | 28.75 | 21.09 | 15.49 |
| Tajikistan | 2017 | 4458 | 25.06 | 29.50 | 24.66 | 22.63 | 1.44 | 14.73 | 82.11 | 69.27 | 57.08 | 40.76 | 20.15 | 16.32 |
| Total sample | | 17,787 | 100 | 21.85 | 18.72 | 14.81 | 2.31 | 12.19 | 71.92 | 34.27 | 25.92 | 17.15 | 10.70 | 8.60 |

*Note*: The sample includes women interviewed in the IPV module. Questions on IPV refer to the current partner for married women and to the most recent partner for divorces, separated or widowed women. Observations are weighted using provided and rescaled sampling weights for selection into the IPV module.

Abbreviation: IPV, intimate partner violence.

*Source*: Armenia (2015), Azerbaijan (2006), Moldova (2005), Tajikistan (2012 and 2017) DHS.

To identify geographic areas affected by violence, I map conflict events recorded between January 1992 and the end/ceasefire of every conflict within the administrative boundaries of each country using UCDP-GED point coordinates. Then, to determine a "catchment" area for each event, I create circles ("buffers") of 15 km in radius centered at the latitude/longitude of the conflict events. Next, for the DHS providing GPS data (Armenia, Moldova, and Tajikistan), I project survey cluster locations on the same map and geographically join them with conflict buffers. Figure 1 shows the procedure for Tajikistan. This strategy allows identifying women who at survey time were in clusters intersecting or contained in the "catchment" radius area of conflict events. I define them as conflict-exposed.

The procedure differs for Azerbaijan as its DHS is not geocoded. Yet, a strength of this survey is that it offers special conflict-sensitive questions that allow identifying women affected by violence, their location and age when that occurred. Specifically, the survey provides information on the status of refugee from Armenia or of internally displaced person (IDP) from Nagorno-Karabakh of each household member, his/her origin district if displaced from the disputed territories, and the duration of stay in the current place of residence. In the absence of GIS data, I use this set of variables to identify women affected by the conflict either because they lived in conflict-affected districts in Nagorno-Karabakh, in Armenia (forced to flee as a result) when young or because they resided since 1991 (i.e., before conflict onset) in the Eastern parts of the contested districts of Agdam, Fizuli and Terter. After the 1994 ceasefire, only the Eastern segments of these three districts remained under Azerbaijan's jurisdiction as parts of what, in Azerbaijani language, is known as the Upper-Karabakh region (United Nations Security Council, 1993). The remainder was (until August 2020) controlled by Armenian-supported separatists as part of the de facto Republic of Nagorno-Karabakh/Artsakh, and thus was not sampled in the Azerbaijan DHS. As a direct indicator of conflict exposure (and rare to come by in survey data), reported IDP/refugee status is the most suitable alternative to absent spatial data. Further, the small geographical size of Agdam (1.150 km$^2$), Fizuli (1.390 km$^2$) and Terter (957 km$^2$) makes conflict exposure measured in terms of residence since 1991 comparable to a 15 km buffer (see Figure S2).
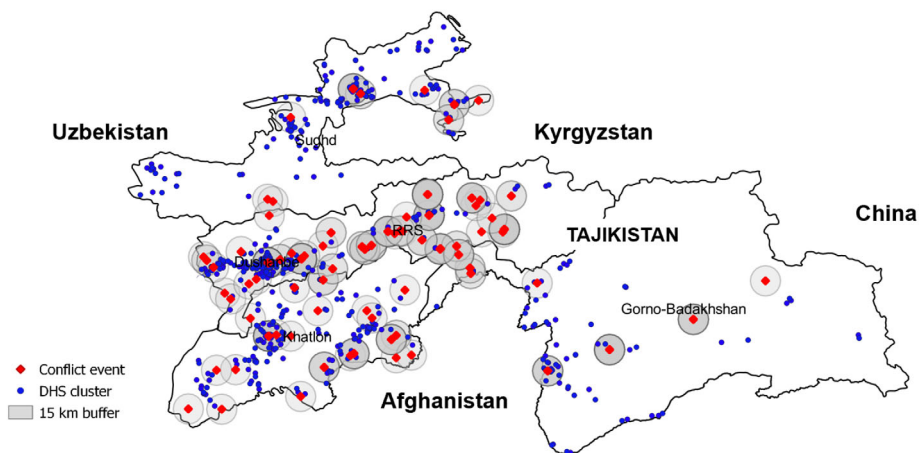


**F I G U R E  1**    Buffer (15 km) around conflict events occurred in 1991–1997 in Tajikistan and Demographic and Health Surveys (DHS) clusters (2012 and 2017). The red diamonds represent conflict events; the gray circles their 15 km catchment areas. Blue dots are DHS clusters. Of these, those falling inside or intersecting with the gray circles are considered as conflict-affected clusters. *Source*: Tajikistan (2012, 2017) DHS for survey clusters. UCDP-GED (2020) for conflict data. DIVA-GIS for map shapefile. [Color figure can be viewed at wileyonlinelibrary.com]

## EMPIRICAL STRATEGY

I begin to study the relationship between young-age experiences of armed violence and later IPV with the following linear probability model:

$$Y_{ikdt} = \alpha + \beta_a Conflict_{kda} + \theta' X_i + \gamma_k + \delta_d + \varphi_{ct} + \varepsilon_{ikdt} \tag{1}$$

where $Y_{ikdt}$ is an outcome (e.g., lifetime, past-year IPV) for respondent $i$ born in year $k$ in district $d$ at survey time ($t$). $Conflict_{kda}$ is a dichotomous indicator taking the value of 1 if a woman's cluster was affected by war (fell/intersected with a conflict event catchment "area") when she was of age $a$. This for Armenia, Moldova, and Tajikistan. For Azerbaijan, it takes the value of 1 for women born in year $k$ who, when aged $a$, were in districts in Nagorno-Karabakh, in Armenia (then forced to flee), or lived in the contested districts of Agdam, Fizuli, and Terter.

Following international definitions (Clark et al., 2020), I identify three critical age-periods for exposure to conflict: childhood (0–10), early adolescence (11–15) and late teen-ages (16–19). Interest in exposure at these specific stages is further motivated by the literature on child development, which identifies childhood (0–10) as the period most susceptible to the long-term effects of violent shocks, and adolescence (11–19) as a fundamental moment for one's attitude formation (Howell et al., 2016; Jonkman, 2006; Krosnick & Alwin, 1989). In specification (1), I combine them together into a single variable so that the coefficient $\beta_a$ measures the relationship between being exposed to war in early ages (i.e., by age 19) and the outcomes compared to not being exposed, either ever or by age 19. The focus is thus on the specific IPV trajectories of women who, above the regime transition, grew up additionally affected by war. The term $X_i$ is a vector of individual-level controls, including respondents' educational level (attained the compulsory 9-years cut-off), urban/rural residence, employment status, total number of children, age at first union and age difference with partner. It further includes a variable measuring whether the woman's father ever battered her mother, or whether herself was beaten by him after age 15, and a binary indicator for partner's alcohol use (Ismayilova, 2015). As some may be considered "bad controls," that is be themselves outcomes to the treatment (Angrist & Pischke, 2008), I first run models without these variables and added them later to improve precision and examine their specific association with IPV. I denote with $\gamma_k$, $\delta_d$, $\varphi_{ct}$ birth-year, district and country-survey fixed effects. Each controls for (time-invariant) unobservable factors at the cohort-, district- and country-level. In specific, $\gamma_k$ controls for the underlying trend in IPV due to belonging to a younger/older cohort. This might be affected by, for instance, general changes in societal values that may lead younger women to be less tolerant of spousal abuse (Arestoff & Djemai, 2016). $\delta_d$ accounts for time-invariant local conditions affecting IPV independent of conflict and common to women in the same districts. For Tajikistan, the survey dummies $\varphi_{ct}$ control for changes in the outcomes occurred within the country over time.

Next, I delve into when in early-life conflict occurs using the following specification:

$$Y_{ikdt} = \alpha + \beta_1 Conflict0\_10_{kd} + \beta_2 Conflict11\_15_{kd} + \beta_3 Conflict16\_19_{kd} + \theta' X_i + \gamma_k + \delta_d + \varphi_{ct} + \varepsilon_{ikdt} \tag{2}$$

Here, I subdivide the conflict indicator into three separate dummies reflecting the developmental age-periods identified above. Hence, the coefficients attached to each dummy measure the associations between experiencing conflict in a specific life-stage (e.g., between 0 and 10) and the outcome compared to not being exposed, ever as well as at those particular ages. Some points are worth noting. First, this construction implies that for older (earlier) age-periods, the

comparison group includes respondents exposed to war exclusively in earlier (older) periods. Hence, coefficients are on the conservative side. Second, age-periods are not mutually exclusive: a subject could have experienced conflict continuously between ages 0–15 or 11–19 (though not in all three life-stages given the duration of the conflicts). For instance, the age-period variables for childhood and early adolescence are both coded as 1 for a Tajik woman in a conflict-affected district who was 7 when the war started in 1992 because she was aged 12 at its end in 1997. Figure 2 allows to visualize the cohorts of interest, the proportions of those affected by war (at different ages) in each country sample, and the comparison groups. In specification (1), the comparison group includes all women in the "gray" bars. In specification (2) the comparison group, for example, to those exposed to war between ages 0 and 10 (dark blue), comprises also women in "lighter-blue" bars, except for respondents who due to their age at conflict onset/end fall into both the 0–10 and 11–15 age-group variables (as in the example of the Tajik woman). I later add interaction terms between the age-period conflict dummies to tackle this aspect and examine if exposure to war earlier in life moderates the association between exposure at older ages and the outcomes.

In the absence of older survey waves to investigate pre-conflict trends in IPV, my approach relies on within-cohort/within-district comparisons, controlling for confounding factors. I am aware that the lack of full migration histories and information on place of birth raises concerns about measurement and selection bias due to endogenous migration. I address this issue and run other tests in the robustness checks. Regressions are weighted for selection in the IPV module following survey weights re-scaling, and robust standard errors are clustered at the district-level (Bertrand et al., 2004).
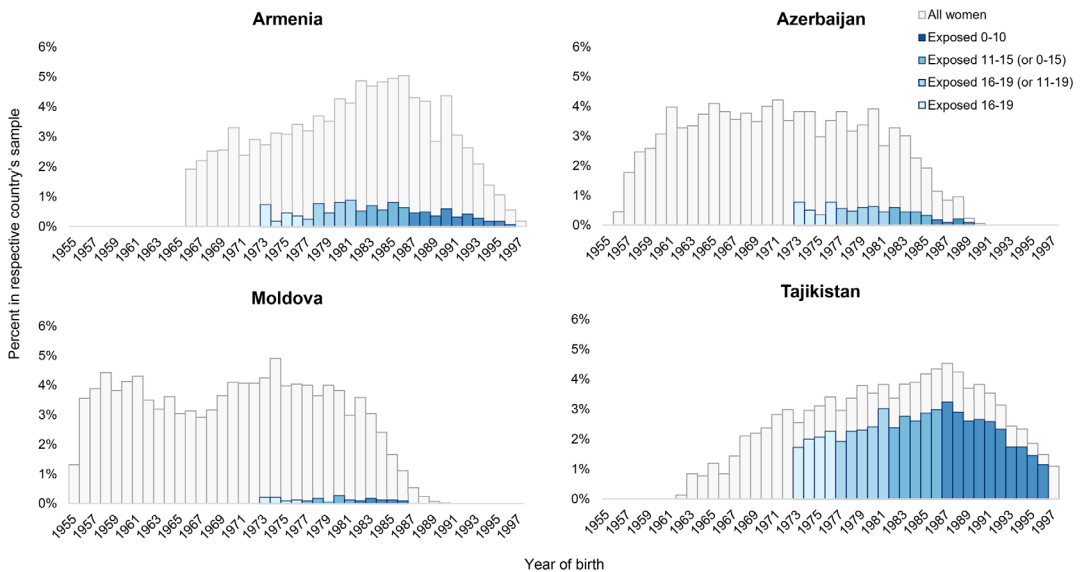


**FIGURE 2** Cohort percentages and conflict-affected women in each cohort, by country. Blue bars indicate women who were exposed to conflict between 0 and 19. Dark blue bars on the right-hand side indicate women within respective cohorts who were exposed to conflict between ages 0 and 10 only; lighter blue bars on the left-hand side indicate women who were exposed to conflict between 16 and 19 only. Women in middle lighter blue bars were exposed to conflict between 11–15 and 16–19, but could also have been consecutively exposed between 0–15 or 11–19. *Source*: Armenia (2015), Azerbaijan (2006), Moldova (2005), Tajikistan (2012 and 2017) DHS. [Color figure can be viewed at wileyonlinelibrary.com]

# RESULTS

## Descriptive results

Table 1 shows summary statistics for the pooled and country-specific samples of women completing the IPV modules. Overall, about 22% of respondents reported having ever experienced at least one form of IPV and 19% the year before the interview. Rates were lowest in Caucasian countries, and highest Moldova and Tajikistan (both above 20%). In Tajikistan, rates increased over time. The cross-country similarity in lifetime and past-year IPV suggests that most women who ever experienced IPV were (also) victimized the year before the survey. Forms of physical violence were generally the most frequently declared, yet only 2% of respondents in the pooled sample reported sexual abuse. Partner's controlling behavior was particularly common, with over 71% reporting at least one form of control.

As for conflict, about 34% of respondents experienced armed violence at some point in life, and 26% by age 19. Around 17% was exposed in childhood (0–10), nearly 11% between 11–15 and 9% at ages 16–19. As Figure 2 showed, Tajikistan had the highest proportion of women affected by war. Here, the majority experienced conflict in childhood, whereas in Azerbaijan most women were exposed to war in adolescent ages. Exposure to war was lowest in Moldova, where only about 2% experienced conflict in either childhood or adolescence. As per other characteristics, about 19% of women reported having a violent father and 44% a partner drinking alcohol. On average, women married in their early 20s, mainly reside in rural areas and have at least 9 years of schooling. Most respondents were unemployed and 5 or less years younger than partners (Table S2).

Looking at the unconditional associations between the main variables of interest, two points seem particularly salient (Table 2). First, women exposed to conflict by age 19 generally reported higher rates of domestic abuse (and more lenient attitudes towards IPV) than those not exposed at corresponding ages, or ever. For instance, about 27% of women exposed in early childhood (0–10) or adolescence (11–15) reported having ever experienced IPV (correspondingly, 73% do not) as compared to 21% of those living in more peaceful conditions, ever and at those ages. Differences were evident for physical violence and controlling behavior, but not for sexual or psychological violence. Second, associations were stronger and differences wider the younger the age at conflict exposure. The weaker associations between most IPV outcomes and war exposure in adolescence were possibly due to the comparison group, which included women exposed only in childhood. Nevertheless, there seems to be a pattern of young-age conflict exposure linked to greater future victimization, particularly physical, from partners. The next section examines the relationship with regression models.

## Estimation results

Table 3 reports the results of fully adjusted linear models for exposure to conflict by age 19, whereas Table 4 presents those of models with age-periods dummies. Estimates showed a significant positive association between conflict exposure by age 19 and women's probability of later victimization from partners (Table 3), and that this result was driven by childhood (0–10) exposure to conflict (Table 4). Experiencing war before age 11 increased the likelihood of lifetime (Column 1) and past-year (Column 6) victimization by 7 and 5 percentage points, respectively. Though these values perhaps appear minor impacts at first, they are equivalent to a nontrivial increase of 32% and 28% relative to the sample means of each outcome (recalling that 21% and 19% of women reported lifetime and past-year IPV, respectively). The similar coefficient sizes suggested little fading in the impact of conflict on IPV, or recall bias. The relationship with exposure to war at older ages (11–19) remained positive, but was generally not

**TABLE 2** Associations between conflict exposure at different life stages, intimate partner violence (IPV) outcomes and attitudes.

| Conflict exposure between (%) | Ages 0–19 | | | Ages 0–10 | | | Ages 11–15 | | | Ages 16–19 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Exposed | Not exposed | p-value | Exposed | Not exposed | p-value | Exposed | Not exposed | p-value | Exposed | Not exposed | p-value |
| Ever experienced | | | | | | | | | | | | |
| Any IPV | 26.6 | 20.2 | <.001 | 27.5 | 20.7 | <.001 | 26.7 | 21.3 | .002 | 24.8 | 21.6 | .273 |
| Physical violence | 20.0 | 13.0 | <.001 | 20.4 | 13.6 | <.001 | 20.5 | 14.1 | <.001 | 19.0 | 14.4 | .001 |
| Sexual violence | 2.0 | 2.4 | .208 | 2.3 | 2.3 | .755 | 1.9 | 2.4 | .251 | 1.5 | 2.4 | .173 |
| Psychological violence | 13.0 | 11.9 | .485 | 13.2 | 12.0 | .691 | 13.6 | 12.0 | .962 | 12.6 | 12.2 | .081 |
| Controlling behavior | 78.9 | 69.5 | <.001 | 81.0 | 70.1 | <.001 | 77.6 | 71.3 | <.001 | 75.3 | 71.6 | .020 |
| Has experienced past-year IPV | 23.1 | 17.2 | <.001 | 24.2 | 17.6 | <.001 | 22.8 | 18.2 | .011 | 20.7 | 18.5 | .752 |
| Has a violent father | 14.2 | 19.9 | <.001 | 14.5 | 19.3 | <.001 | 14.1 | 19.0 | <.001 | 13.5 | 18.9 | <.001 |
| Justifies wife beating at least once | 66.2 | 41.7 | <.001 | 68.5 | 43.8 | <.001 | 65.5 | 45.9 | <.001 | 62.5 | 46.7 | <.001 |

*Note:* Age categories are not mutually exclusive (a respondent could be exposed to conflict in two consecutive life stages). "Exposed" indicates to women who experienced conflict during the specified ages. "Not exposed" refers to women who did not experience conflict ever or in the specified ages, but may have in earlier/later age periods.

*Source:* Armenia (2015), Azerbaijan (2006), Moldova (2005), Tajikistan (2012 and 2017) DHS.

**TABLE 3** Exposure to conflict by age 19 and women's experiences of intimate partner violence (IPV).

| | | Ever experienced | | | | Past-year IPV |
|---|---|---|---|---|---|---|
| | Ever experienced any violence | Physical violence | Sexual violence | Psychological violence | Controlling behavior | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Exposure to conflict at age 0–19 | 0.063*** | 0.041** | 0.011* | 0.036** | 0.015 | 0.054*** |
| | (0.015) | (0.013) | (0.006) | (0.012) | (0.016) | (0.014) |
| District FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Birth-year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 17,787 | 17,787 | 17,787 | 17,787 | 17,787 | 17,787 |
| $R$-squared | 0.168 | 0.145 | 0.145 | 0.107 | 0.181 | 0.153 |
| $F$ test $p$-value | .000 | .000 | .000 | .000 | .001 | .000 |

*Note*: The results are estimated using OLS. Regressions are weighted using survey weights for selection into the IPV module. Robust standard errors are clustered at the district level. All models control for survey-country dummies, having a violent father, partner's alcohol use, education (9+ years), urban residence, spousal age difference (0 or husband younger, 1–5, 6+), age at marriage, children ever born and employment status. The sample includes all women who were interviewed in the IPV module. In Column 1, the dependent variable is whether the woman ever experienced one or more IPV from her partner. In Columns 2–5, whether she experienced each specific type of violence or controlling behavior from her partner. In Column 6, the dependent variable indicates whether the woman experienced any form of IPV in the 12 months preceding the survey.
†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.
*Source*: Women recode of the Armenia (2015), Azerbaijan (2006), Moldova (2005), Tajikistan (2012 and 2017) DHS.

significant, except for a moderate link between past-year IPV and conflict in early teens (11–15). As for specific forms of IPV, war by age 19 increased risk for all type of abuse from partners, and again the results were driven by exposure at the youngest ages. Childhood exposure was strongest linked to physical and sexual abuse (Columns 2 and 3), and more mildly to psychological violence (Column 4). I found no evidence of a relationship with partners' controlling behaviors, though coefficients were still positive.

Besides conflict violence in childhood, having a violent father and a partner drinking alcohol increased the probability of all outcomes, particularly physical abuse. In contrast, the relationship with education was negative: ceteris paribus, women with 9+ years of education were less likely to experience IPV, but not controlling behaviors. Residence type, employment status and spousal age difference were not associated with IPV, whereas early marriage and having more children increase vulnerability (not shown).

## Interactions

As a woman could have experienced conflict both in childhood and early teens (0–15), or continuously during adolescence (11–19), it is important to examine whether war exposure at earlier ages moderates the relationship at older ages. I thus introduced interaction terms between the age-period conflict dummies. Results for lifetime IPV are in Table S3. Other outcomes are not shown as findings are equivalent. In Column 1, the coefficients of each age-period conflict dummy ($\beta_1$–$\beta_3$) estimate the main relationship for those exposed only at ages 0–10, 11–15, and 16–19; the coefficients $\beta_4$ and $\beta_5$ show additional changes related to continuous exposure between 0 and 15, and adolescence (11–19), respectively. In Column 2, I combined adolescent ages into a single variable (11–19) and interacted it with childhood exposure to capture more succinctly any moderating influence of childhood exposure on adolescent exposure. I found no

**TABLE 4** Young-age exposure to conflict and women's experiences of intimate partner violence (IPV).

| | Ever experienced any violence | Ever experienced | | | | Past-year IPV |
| | | Physical violence | Sexual violence | Psychological violence | Controlling behavior | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Exposure to conflict at age 0–10 | 0.070*** | 0.039* | 0.019** | 0.031* | 0.011 | 0.052** |
| | (0.019) | (0.018) | (0.007) | (0.015) | (0.020) | (0.019) |
| Exposure to conflict at age 11–15 | 0.030 | 0.032† | −0.003 | 0.027† | 0.006 | 0.036* |
| | (0.019) | (0.018) | (0.006) | (0.015) | (0.020) | (0.018) |
| Exposure to conflict at age 16–19 | 0.017 | 0.006 | 0.003 | 0.013 | 0.024 | 0.014 |
| | (0.021) | (0.019) | (0.007) | (0.017) | (0.022) | (0.020) |
| Having a violent father | | | | | | |
| Yes | 0.180*** | 0.123*** | 0.030*** | 0.108*** | 0.066*** | 0.170*** |
| | (0.011) | (0.010) | (0.005) | (0.010) | (0.010) | (0.011) |
| Partner's alcohol abuse | | | | | | |
| Yes | 0.126*** | 0.101*** | 0.014*** | 0.068*** | 0.091*** | 0.113*** |
| | (0.009) | (0.008) | (0.003) | (0.007) | (0.009) | (0.008) |
| Education | | | | | | |
| >9 years | −0.038*** | −0.020*** | −0.007* | −0.025*** | −0.013 | −0.033*** |
| | (0.008) | (0.007) | (0.003) | (0.007) | (0.009) | (0.008) |
| District FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Birth-year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 17,787 | 17,787 | 17,787 | 17,787 | 17,787 | 17,787 |
| *R*-squared | 0.169 | 0.145 | 0.146 | 0.107 | 0.182 | 0.153 |
| *F* test *p*-value | .000 | .000 | .000 | .000 | .000 | .000 |

*Note*: The results are estimated using OLS. Regressions are weighted using survey weights for selection into the IPV module. Robust standard errors are clustered at the district level. All models control for survey-country dummies. Beyond the shown covariates, other controls include urban residence, spousal age difference (0 or husband younger, 1–5, 6+), age at marriage, children ever born and employment status. The sample includes all women who were interviewed in the IPV module. In Column 1, the dependent variable is whether the woman ever experienced one or more IPV from her partner. In Columns 2–5, whether she experienced each specific type of violence or controlling behavior from her partner. In Column 6, the dependent variable indicates whether the woman experienced any form of IPV in the 12 months preceding the survey.
Abbreviation: IPV, intimate partner violence.
†$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.
*Source*: Women recode of the Armenia (2015), Azerbaijan (2006), Moldova (2005), Tajikistan (2012 and 2017) DHS.

additional changes in the relationship due to continuous exposure to conflict, confirming that war was associated with IPV exclusively when experienced in very early-life.

## Alternative specifications and robustness checks

Results were robust to various checks. First, there was the concern of potential selection bias due to endogenous migration. If more vulnerable women were more likely move out of conflict areas, and vulnerability correlated with greater chances of experiencing IPV, then estimates would have been dragged against finding significant results. Alternatively, coefficients could be

biased towards significance if poor social networks prevented some women to migrate from conflict zones, and weak ties were associated with higher risk of IPV (La Mattina & Shemyakina, 2020). To examine this issue, I limited the analytical sample to women who did not migrate since the start of each conflict ($N = 9447$), using questions on years lived in the current location (see Table S4 for differences in observable characteristics between migrants and nonmigrants). For Azerbaijan, I employed this information to specifically identify non-IDP/refugee women never moving from Karabakh territories. This check was also important give the time-lag and migratory moves between conflict and survey data collection which, for instance, were considerable in Tajikistan (note that respondents from Tajikistan 2012 DHS are excluded from these analyses as not asked about years lived in current residence) (O'Brien, 2022). The direction and significance of the relationships remained generally stable (Table S5): conflict exposure in childhood was positively associated with IPV and the increase was comparable to that observed in the full sample (the coefficient of 0.09 in Column 1 represents 38% increase in the likelihood of IPV for never-migrant women exposed to conflict in childhood relative to the sample mean). Exposure at any other age, and in multiple periods (not shown) was not associated with later-life IPV.

Second, I restricted the sample to women who married/cohabited after 1991 ($N = 12,887$), that is, after the onset of each conflict, to make the exposed and nonexposed groups as comparable as possible at the detriment of sample size. Again, the only significant relationship was with childhood conflict exposure (Table S6). Its strength and size were though weaker, suggesting more homogenous outcomes for women who formed unions after the Soviet break-up.

Third, I run models with the full and the nonmigrant samples, excluding or including only Azerbaijan as I there defined conflict exposure using a combination of information on IDP/refugee status and residence in conflict-affected districts, not geospatial measures. In both cases, results remained qualitatively equivalent, although in the Azerbaijan-only sample ($N = 3186$) the association was weak (Columns 1–4, Table S7). Equally, findings for lifetime and past-year IPV were stable when I run country-specific models for the remaining countries (Columns 5–10, Table S7), and when I excluded ($N = 9683$) cases from Tajikistan, the country which provided most cases and where respondents were more likely to have experienced war and IPV (not shown). Country-specific models yielded similar results also for the nonmigrant samples (not shown).

Fourth, I estimated models using different age cut-offs for conflict exposure. Given the relevance of early childhood, I first split the youngest age-group category into 0–5 and 6–10 (there were too few cases of exposed women at very early ages (0–2, 3–5) in Moldova (none) and Azerbaijan ($n = 13$) to subdivide this age-group into smaller categories). Although further disaggregation of this kind may lead to less precise estimates, it can inform us on whether, for instance, conflict had different impacts on girls who were of pre-school versus schooling ages, and hence suggest driving routes. Then, I did the opposite and collapse the age-groups into non-teen (0–12) and teen-ages (13–19). Results broadly mirrored those of the main models (Tables S8). Conflict in pre-school (ages 0–5), early school-age (6–10) or before age 13 was positively associated with greater IPV. Sexual abuse was here strongly, yet only, linked with exposure in infancy (ages 0–5) (not shown).

Fifth, I performed analyses using progressively increasing (20 km) and decreasing (10 km) buffer radii for the countries providing geospatial survey data. I did this first because, in the absence of theoretical or empirical priors, I chose the 15 km conflict "catchment" areas for practical reasons related to the small size of the selected countries and comparability with Azerbaijan; second, because DHS randomly displace cluster coordinates by up to 5 km to ensure respondents' privacy. Results were comparable to the main specification using a 15 km buffer (Figure S3, Panel A). For the full sample, the coefficient size for childhood exposure increased with the buffer radius. Conversely, in the nonmigrant sample, the magnitude of the

association decreased with distance (Figure S3, Panel B). This perhaps suggests particular vulnerability to IPV for women living in close proximity to conflict events when young and who never relocated since. Relatedly, to further check the importance of conflict measurement level (and thus close proximity to violence), I run analyses using the broad DHS sub-national regions as proxies for exposure to conflict, as prior work has done (La Mattina & Shemyakina, 2017). Living in a more unstable region at young ages was not associated with greater victimization in adult life, either in the pooled sample and in each specific country (not shown). The finding that a relationship was only visible with indicators that more carefully considered women's proximal exposure to conflict, while it disappeared with region-level measures, is revealing of the importance of measuring conflict with fine-grained indicators.

Finally, I checked the result robustness to model specification, including logit and probit regressions, augmented linear models with a country-specific or district-specific linear birth cohort trend to further account for unobservable country/district and birth-year specific common trends (La Mattina & Shemyakina, 2020), and run models using cluster rather than district fixed effects (Adhvaryu & Fenske, 2021). In all cases, estimates remained very similar to the main results (not shown).

## Potential mechanisms

### Family violence

Findings indicated a higher risk of abusive relationships in adulthood for women exposed to war in childhood. A potential channel may be increased exposure to family violence. Prior research documenting rising IPV during armed conflicts and well-established knowledge that childhood experiences of family violence are highly predictive of later victimization give reason to expect these women to have experienced greater levels of violence within the family, resulting in later greater higher risk of victimization in their own relationships.

I examined this mechanism using information on father's violent behavior against the respondent or her mother. Admittedly, the wording of the survey questions is not ideal as it only captures "ever" witnessing the father beating the mother or having "ever" been directly abused since age 15, and hence does not allow a detailed examination of the timing of the onset of the father's violence. However, it was the only available instrument in the DHS to investigate the channel. Results in Column 1, Table 5 confirmed the hypothesis: women who experienced conflict in childhood only were more likely to have a violent father. Country-specific estimates further indicated a significant association in Tajikistan ($\beta = .059$; 95% CI: 0.019–0.098), and a positive sign in Armenia and Azerbaijan. These findings perhaps suggest that war translated into greater aggressive behavior of male figures in the family, especially in the bloodiest and geographically spread conflict (Tajik war), and that this childhood history of family abuse in turn had harmful implications for conflict-affected women's later risk of IPV.

### Attitudes towards IPV

Another plausible reason may be that war in early-life affects perceptions of acceptable social behavior to the extent that it legitimizes force within private relationships. If violence became a norm, conflict-affected girls may have become more vulnerable to IPV because of increased emotional callousness to abuse. It is also plausible to expect a normalization in the use of violence in future interpersonal relations in men, and thus potential perpetrators, exposed to conflict when young. I next assessed the "desensitization–normalization" hypothesis in women and men as a potential channel.

**TABLE 5**   Young-age exposure to conflict, family violence and attitudes towards intimate partner violence (IPV).

| Women | | | | Men | |
|---|---|---|---|---|---|
| | Having a violent father | No. of situations in which wife beating is justified | Wife beating justified in at least one situation | No. of situations in which wife beating is justified | Wife beating justified in at least one situation |
| | (1) | (2) | (3) | (4) | (5) |
| Exposure to conflict at age 0–10 | 0.036* | 0.081 | −0.005 | −0.184 | −0.076 |
| | (0.17) | (0.084) | (0.021) | (0.137) | (0.055) |
| Exposure to conflict at age 11–15 | 0.004 | −0.007 | 0.020 | 0.041 | −0.037 |
| | (0.017) | (0.078) | (0.020) | (0.168) | (0.055) |
| Exposure to conflict at age 16–19 | 0.003 | 0.036 | −0.023 | 0.331* | 0.169** |
| | (0.018) | (0.089) | (0.023) | (0.163) | (0.054) |
| District FE | Yes | Yes | Yes | Yes | Yes |
| Birth year FE | Yes | Yes | Yes | Yes | Yes |
| Observations | 17,787 | 17,787 | 17,787 | 8350 | 8350 |
| R-squared | 0.239 | 0.369 | 0.335 | 0.307 | 0.279 |
| F test p-value | .000 | .000 | .000 | .000 | .000 |

*Note*: The results are estimated using OLS. Regressions for women are weighted using survey weights for selection into the IPV module. Robust standard errors are clustered at the district level. All models control for survey-country dummies. In Column 1 controls include urban residence, educational level, partner's alcohol abuse, employment status, spousal age difference, age at marriage and children ever born. Columns 2 and 3, also include a control for having a violent father. In Columns 1–3, the sample includes all women interviewed in the IPV module. In Columns 4 and 5, the sample includes all men interviewed in men questionnaire. In Column 1 the dependent variable is a binary indicator taking the value of one if whether the woman's father ever battered her mother, or whether herself was beaten by him after age 15. In Columns 2 and 4, the dependent variable is the number of situations in which wife-beating is justified (0–5). In Columns 3 and 5, the dependent variable is a binary that takes the value of one if wife-beating is justified in at least one situation. †$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.
*Source*: Women and men (excluding Tajikistan for the male sample) recodes of the DHS.

Apart from actual experiences of spousal abuse, DHS collected information on attitudes towards IPV in several situations (e.g., if the woman neglects children, burns the food, or refuses sex. Table S1 for specific questions) from all female respondents and from one randomly selected man (aged 15–49/59) in a sub-sample of households. I used this information to generate two new dependent variables, one for whether the respondent agrees with at least one statement on wife-beating, the other counting the total number of instances in which the respondent justifies violent partner behavior, and estimated models for each gender. As for women, I built conflict variables for men using geocoded measures or IDP/refugee information. Unfortunately, Tajikistan's DHS did not collect information from men. Hence, estimates for men come from the other three countries only.

Results for women showed no link between war exposure and the number of episodes in which women tolerate wife-beating (Columns 2 and 3, Table 5). The same was for justifications of wife-beating in at least one situation, even when models for count data were specified (not

shown). Models with interaction terms, performed separately for each country and on the non-migrant sample also yielded similar estimates (not shown).

To further explore the "desensitization" side of the hypothesis, I examined the probability of separation/divorce in women who reported experiencing IPV. The rationale was that, if war desensitized women to violence within unions, then those exposed to conflict should have been less likely to leave abusive relationships (Gallegos & Gutierrez, 2016; Svallfors, 2021). I found no differences in union dissolution for women exposed to war in childhood in this sub-sample (not shown), which further discards desensitization as a plausible channel.

Patterns in attitudes towards IPV are more complex for men (Table 5, Columns 4 and 5). Exposure to conflict as a young boy was not associated with either indicator of acceptance of wife-beating. Conversely, war in late adolescence (16–19) significantly increased the number of episodes in which men deem IPV acceptable and the probability of justifying it in at least one situation. The result was confirmed when including an interaction between the age-period conflict dummies, and was stable in terms of direction at the country-level (Armenia: $\beta_{\text{conflict between16–19}} = .26$; 95% CI: 0.12–0.39; Azerbaijan: $\beta = .15$; 95% CI: 0.01–0.17; Moldova: $\beta = .17$; 95% CI: $-0.01$ to 0.51). The size of the impact was considerable: conflict exposure in late teens increased the chance of responding affirmatively to at least one question on wife-beating by 0.169, that is, by 48% relative to the sample mean. This could signal that war carried "normalizing" lasting consequences on men's formation of attitudes towards IPV, especially for adolescent boys. That is, for those young ones who, because of their age at wartime, were more susceptible to direct engagement in armed violence (Lowicki, 2000). The fact that this channel was visible with different magnitude, but same direction both in the pooled and country-specific models is further revealing of its plausibility, at least in countries characterized by officially unsettled conflicts.

## Other plausible mechanisms

Several other channels may explain women's higher probability of experiencing abusive relationships after conflict exposure in early childhood. Conflict-induced changes education, marriage timing and spousal age difference are the few I could test with present data. These pathways give cues on war-related changes in marriage market conditions that may be linked to IPV. I thus run models using (i) years of education attained by women and (ii) by their partners, (iii) female age at marriage and (iv) spousal age difference as dependent variables. I further looked at women's employment status in the survey year to test if conflict exposure was somehow related to their income-generating activities. For all outcomes, I found no significant differences associated with women's exposure to conflict by age 19. I only found small reductions in educational attainment (3.5 months, $p = .017$). There was also no link between exposure to conflict by age 19 and men's educational attainment (not shown). None of these channels thus added explanations to the higher IPV risk of women early-exposed to war (or to the greater toleration of men affected by conflict when adolescents).

## DISCUSSION AND CONCLUSION

The end of a conflict not always brings an end to violence. In war zones, violence can morph into less visible forms, and intrude into the private realm of the family. Its scars can also persist over the life course. This paper examined the long-term implications of young-age exposure to conflict on women's later domestic victimization in post-Soviet Eurasia, where IPV is perceived as a serious concern, but legislative instruments to protect victims are weak (Gallup World Poll, 2015).

The results showed that women who were exposed to armed conflict in childhood had a greater probability of experiencing IPV in adult relationships. Exposure in adolescence was too positively linked to partner abuse, yet the association was generally not significant nor was exposure across multiple periods. Findings were not driven by migration, and were similar at the country-level. Conflict in childhood was strongly associated with physical forms of IPV, and with future sexual abuse when experienced in infancy. Although this latter result should be taken with care due to small numbers, the overall message seems to be that the earliest the conflict experience, the more scarring and physically damaging the possible consequences.

These findings agree with previous research documenting increasing levels of IPV in contexts affected by armed conflict (e.g., Østby, 2016), thereby extending the pool of evidence on the transmissibility of violence across social spaces. Importantly, they align with the two prior studies that further considered the age at war exposure, though my estimates tend to be larger in size (Gallegos & Gutierrez, 2016; La Mattina & Shemyakina, 2017). A reason for this may be that the conflicts examined here took place amid a major socio-political transformation that challenged the economic stability, national identities, gender and social values of these population in ways that were already detrimental to women (UNICEF, 1999), and that wars further exacerbated. The final result is thus to be understood as a combination of experiencing conflict as well as the transition to a new socio-political regime, but the consistency of findings with prior studies (therefore across sites and conflicts) increases confidence in the direction of relationship and calls for greater attention to be paid to armed violence when studying the determinants of IPV.

If domestic abuse in war settings is not isolated from the experience of conflict itself, what processes may promote this continuation of violence? My empirical investigation of some of the many theoretically plausible avenues suggested that neither conflict-related changes in marriage market conditions, nor in women's attitudes towards IPV explain the link. What happens to men during war, instead, appeared salient. First, the finding that women experiencing conflict in childhood were more likely than any other group to have a violent father—especially in Tajikistan where the war was highly intense and accompanied by a rapid return to traditional family values and gender roles (Falkingham, 2000)—aligns with the idea that armed conflict has "immediate" implications for the behavior of men in the domestic realm. Importantly, it also suggests that this may have lasting intergenerational effects on daughters. Second, the finding that men exposed to war in late adolescence were more inclined to justify IPV perhaps indicates that, beyond simultaneous consequences on violent behavior, war may carry enduring implications for men's attitudes towards violence. Given that gender attitudes are good predictors of gender behavior (Ajzen & Fishbein, 1973), it is possible that men who experienced conflict in ages when they would be more likely to be mobilized and fight modeled their later-life beliefs and value system (and, presumably, behaviors) on what they learned in the battlefield (Mendelsohn & Straker, 1998). It is worth noting that this channel was visible in all the three countries where conflicts remain unsettled. More data collection efforts should be made to investigate this aspect also where a peace agreement has been reached, as in Tajikistan.

The findings on attitudes towards IPV draw attention to another gender-related difference in the legacy of war that has not yet been thoroughly examined. While the gendered consequences of war on health and survival (Ghobarah et al., 2003; Plümper & Neumayer, 2006), education and labor market outcomes (Bertoni et al., 2019; Justino, 2017) are vastly documented, only recently interest has been directed to attitude formation, especially concerning interpersonal violence (La Mattina & Shemyakina, 2020). Results further emphasize the importance of considering the role of caregivers, and the interconnection between gender and age (i.e., *when* exposure occurred) when analyzing the consequences of such shocks.

While the findings are robust to checks, across model specifications and countries, there are some limitations warranting mention. Although I endeavored to exploit the depth and breadth of available information on both forms of violence, data are cross-sectional and do not allow

exploring pre-conflict trends in IPV. Causal interpretation rests on the assumption that trends in IPV across cohorts would have been the same in conflict-affected and nonaffected areas, had the war not occurred. To the degree that this assumption is violated, the estimates represent correlations. The occurrence of war amid a politico-economic transition represents an additional challenge in this respect. However, by leveraging on the uneven geographical distribution of the conflicts, I showed that IPV for young conflict-affected cohorts was higher than for older women and, importantly, than for their peers who "only" experienced the transition to a market economy.

Results should be interpreted as lower-bound estimates given potential reporting bias. Despite DHS rigorous data collection procedures, conflict possibly exacerbated barriers to IPV disclosure and social desirability bias that are widespread even in peaceful contexts, or created additional obstacles to honest reporting, for example, via rule-of-law deficits and cultures of impunity (Okello & Hovil, 2007; Palermo et al., 2014). Estimates came from samples of survivors to war and IPV. It was not possible to know if IPV correlated with one's survival chances, and to account for those emigrated from each country, whether due to conflict/spousal violence or not.

Due to lack of data, I could not explicitly analyze the frequency of IPV victimization. In addition, one of the reasons for data pooling was to minimize the estimation issues associated with small sample size. These risks are automatically re-introduced when one tries to disentangle narrower relationships with specific forms of IPV (with smaller ages at exposure as shown in sensitivity analyses, or at the country-level). This limitation highlights another reason why the relationship between multiple forms of violence over time is poorly documented at the micro-level. Data constraints also precluded additional analyses that could shed more light on driving mechanisms, such as stress/trauma, patterns in alcohol consumption, parental characteristics, especially in relation to poverty, and timing of exposure to familial violence. Exploring these pathways alone and their interactions is a crucial avenue for future research as any single channel is unlikely to be fully explanatory. Relatedly, given the smaller sample (men's questionnaires were administered to a sub-sample of households, and not collected in Tajikistan), I chose to examine men's views of IPV including all male respondents, not only women's current partners. Interest in uncovering conflict-related changes in normative values in the whole group of potential perpetrators, not just partnered men, further justified this choice. Linking men's exposure to conflict to women's actual reporting of IPV, for example, via matching techniques, is another promising research avenue. Similar advances must be preceded by wider investments in data collection at the couple-level.

Finally, as in many studies employing DHS and its GIS data, lack of information on respondents' place of birth and the displacement of survey cluster locations may affect the accuracy of measures based on georeferencing (Skiles et al., 2013). Nonetheless, the spatial measurements used in this study were more fine-grained and precise in terms of geographical units than the large regional variation employed in prior cross-national research (La Mattina & Shemyakina, 2017). Results were also robust to the use of different "catchment" areas, together increasing confidence in the findings and highlighting the importance of building careful and granular conflict measures. Conflict measures based on IDP/refugee status may as well be influenced by reporting issues and may not be fully comparable to geocoded ones. However, as a direct indicator of conflict exposure seldom available in surveys, IDP/refugee status represented the best alternative to missing GIS data. Related concerns are reduced as the main results did not change when I only included/excluded Azerbaijan in the analyses.

From a policy perspective, this study illustrates the value of addressing the transmission of violent behavior through the lenses of attitude formation, and with a focus on the age at conflict exposure for the development of programs that can respond to specific patterns and drivers of violence. My findings suggest that women-targeting policies should give close attention to early

childhood experiences of violence both inside and outside the family domain, and ensure safe environments for girls and their caregivers. At the same time, interventions tackling IPV could devote ad-hoc resources to the cohorts of boys exposed to conflict violence, and to their "incubation" period. This could be achieved through a mix of initiatives focused on trauma-healing, de-escalation and promoting nonviolent models of masculinity (Fulu et al., 2013). Tailored interventions of this kind, if promptly implemented, would not only help breaking the cycle at the individual-level, but also prevent intergenerational ripple effects otherwise difficult to dismantle (Kelly et al., 2018).

Besides tangible destruction, wars generate a lasting amount of confrontation with violence of all kinds. Violence within the home may be part of the troubling social relations armed conflicts create, and needs to be considered as one of its possible consequences if we want to achieve a complete understanding of the legacy of war and devise comprehensive approaches to support the long-term path to recovery.

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## ORCID

*Orsola Torrisi* https://orcid.org/0000-0003-1760-679X

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.