Growing up in a Conflict and Acceptance of Violent Behavior

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Abstract

This paper examines how growing up in a conflict can lead to accepting violent behavior later in life. We match survey data from 23 countries in Sub-Saharan Africa with records of all conflict events post WWII. We show that being exposed to war before age 20 can increase a woman's acceptance of domestic violence later in life. Our results indicate that childhood, rather than adolescence, is the most critical period for the formation of norms surrounding domestic violence. These findings suggest several potential mechanisms that may be driving the increase in acceptance of domestic violence, including lower educational attainment for both women and their husbands and earlier marriage age for women.

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1. Introduction

Domestic violence is pervasive and costly. An estimated one in three women experience abuse worldwide. The estimated annual social cost of assaults during pregnancy is more than $3 billion for the U.S. alone (García-Moreno et al. 2013, Currie et al. 2020). Recent research has shed light on factors contributing to domestic violence; however, the roots of tolerance for domestic violence have not been widely studied (Gulesci 2017). Greater acceptance of domestic violence at the community level is associated with higher abuse rates and decreased reporting by victims (World Health Organization 2009, Cools and Kotsadam 2017). Acceptance of domestic violence tends to be more prevalent in low-income countries than high-income countries. While economic development and other factors may help to explain these differences, the role they play remains unclear.

Childhood and adolescence are especially relevant periods for the formation of attitudes toward domestic violence. The reason is that changes in beliefs during these critical periods can persist through adulthood (Neetu et al. 2017, Dhar et al. 2018). Macroeconomics conditions in young adulthood and conflict exposure in childhood have long-lasting consequences on economic and political attitudes (Adhvaryu and Fenske 2014; Giuliano and Spilimbergo 2014). However, previous research fails to inform how shocks experienced early in life affect one's tolerance for violent behavior. We shed light on this question by examining the effect of conflict on attitudes towards domestic violence in Sub-Saharan Africa. This region has a high prevalence of domestic violence and experienced 34 civil conflicts between 1945 and 1999 (Fearon and Laitin 2003, García-Moreno et al., 2013).

The effect of conflict on acceptance of domestic violence is a priori ambiguous. On the one hand, exposure to war may increase interpersonal violence through a variety of channels, including psychological stress and post-traumatic stress disorder (Miguel et al. 2011, Cesur and Sabia 2016). Conflicts may also increase domestic violence through changes in local

marriage markets and intra-household bargaining (La Mattina, 2017). Higher incidences of domestic violence in households and the community may contribute to raising acceptance of violence as a social norm. On the other hand, given that women tend to work more during a conflict, gender roles may become more equal. Nonetheless, male backlash over women's economic empowerment could actually increase domestic violence in developing countries (Acemoglu et al. 2004, Justino et al. 2012, Justino 2017, Petesch 2017, Guarnieri and Rainer 2018). Finally, several studies find an increase in pro-social attitudes following conflicts. Such attitudes may be associated with reduced support for violent behavior going forward (Bauer et al. 2016).

To study how conflict exposure affects women's attitudes towards domestic violence, we combine Demographic and Health Surveys (DHS) data from 23 countries and 48 surveys in Sub-Saharan Africa with records on conflict events since 1946. The survey data provide geocoded information on acceptance of domestic violence for about 320,000 women interviewed between 1992 and 2017. Our identification strategy exploits variation in conflict exposure across birth cohorts within the same survey cluster and geographic variation across survey clusters within groups of women who were born in the same year.

We find that women who were exposed to a high-intensity conflict (war) before age 20 exhibit increased acceptance of domestic violence. Exposure before age 10 drives the estimated effect. These results suggest that childhood, rather than adolescence, is the critical period for the formation of norms surrounding domestic violence. Nevertheless, the estimated impact is quite small in magnitude, at about four percent of a standard deviation. To zero in on critical age periods for norms formation, we examine the effect of age at first exposure to conflict. We find that being exposed to conflict in in early childhood (from birth through age two) has the most significant impact on the acceptance of domestic violence later in life. As

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conflict often results in population displacement, we explore whether migration might be driving our results. We find that this is not the case.

We explore potential mechanisms through which conflict may affect women's attitudes. These include women's educational attainment, their age at first marriage, and differences in age and education between spouses. We find that for women who experienced conflict in childhood, lower educational attainment (for both the woman and her husband) and earlier marriage age both drive the increase in acceptance of domestic violence later in life.

The literature on early brain development suggests that younger children are most vulnerable to changes in their environment. The reason is that they cannot avoid seeing or experiencing violence. As a result, they are more likely to become desensitized to it. Our results are also consistent with these findings. We observe that the earlier women are exposed to conflict in childhood, the more likely they are to later accept higher violence norms.

This paper contributes to at least two broad sets of literature: The first investigates the determinants of gender attitudes. Some studies in this area examine long-run determinants of gender attitudes, which more broadly include attitudes towards women's work and gender roles. These studies suggest that attitudes and perceptions persist over time and can be transmitted from parents to children (Alesina et al. 2013, Alesina et al. 2016, Fernández et al. 2004, Thornton et al. 1983, Dhar et al. 2019). Despite this persistence, other studies identify policies and interventions that may help reduce women's acceptance of domestic violence. These policies include improving women and their mothers' access to schooling, media, and targeted information programs (Chicoine 2016, Friedman et al. 2016, Cannonier and Mocan 2018, Gulesci et al. 2018, Jensen and Oster 2009, Dhar et al. 2019, Banerjee et al. 2019). Our contribution to this line of research is twofold. First, we shed new light on the role of shocks in shaping these beliefs around acceptance of domestic violence. Second, we use guidance from the literature on brain development and adaptation to environment to provide new

evidence on the age period during childhood that is most susceptible to the long-term effects of shocks.

The second strand of literature studies the effects of conflict on human capital and related outcomes. Extensive research has documented that civil conflicts reduce education and health (see Shemyakina 2011, Akresh et al. 2012, Grimard and Laszlo 2014 among the others) and increase domestic violence (Gutierrez and Gallegos 2016, La Mattina 2017).[1] We add to this literature by focusing directly on the impact of early life exposure to conflict on women's attitudes towards domestic violence and analyzing potential pathways for changes in norms. Additionally, we examine the effect of exposure to conflict during childhood *and* adolescence on acceptance of violent behavior later in life. While the majority of the extant studies focus on early childhood, it is also important to study the period of adolescence, which is considered the second window of opportunity for development and growth (UNICEF 2017; Cuesta and Leone 2020).

Finally, our paper is related to studies that examine the effect of conflict on intangible factors like trust, political engagement, and cooperation. These are challenging to measure and thus tough to rebuild in post-conflict settings (see Bellows and Miguel 2009 and Blattman 2009 among the others).

More research is needed to provide recommendations on which policies may help mitigate the long-term effects of conflict exposure on acceptance of domestic violence. Nevertheless, our results suggest that programs that support very young children and their caregivers may be promising. Policies that help girls catch up with schooling and delay

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[1]These studies report results on attitudes towards domestic violence as a potential mechanism for the effect of conflict on domestic violence (Gutierrez and Gallegos 2016) or a robustness check for misreporting of domestic violence (La Mattina 2017) but do not look at attitudes directly. Grimard and Laszlo 2014 also examine the impact of armed conflict on domestic violence and find no discernible effects.

marriage may also help to reduce acceptance of domestic violence in fragile and conflict countries.

The remainder of the paper is organized as follows. Section 2 discusses the literature on brain development and adaptation to environment, while helping to pinpoint the age ranges when children are most vulnerable to shocks. Section 3 describes the data used in this paper and presents the estimation strategy. Section 4 reports our results. Section 5 discusses robustness checks. Section 6 concludes.

2. Background on Brain Development and Adaptation

This section provides a brief overview of the literature on brain development and adaptation at different ages, which informs our study of critical age periods in attitude formation.

During infancy, children's cognitive limitations protect them from the stress of traumatic events. Infants are highly dependent on their caregivers for survival; as a result, caregivers' stress and resilience are essential determinants of stress in young children (Johnson et al. 2009, Luthar, 2003, Masten et al., 1990, Masten and Coatsworth, 1998). Studies in brain development show that children between the ages of six and 10 show substantial gains in attention processing, and many connections in the brain develop before age 11/12 (Johnson et al. 2009, Jonkman 2006). Therefore, being exposed before this age to new societies, social norms, behaviors, and language would have a substantial and lasting impact.

Studies on childhood trauma (reviewed by Johnson et al. 2009) suggest that children may be more vulnerable when they are separated from their regular caregivers and establish new relationships. In societies without an option for formal daycare, the age of separation usually coincides with the beginning of formal schooling (age 6-7 in most countries). If the beginning of formal education overlaps with a period of violence in society, children who start school

and are separated from their caregivers may experience more stress. They may see more violence outside of their "safe" family spaces and immediate surroundings. Therefore, the timing of this separation, combined with the plasticity of brain development before age ten, may have a lifelong impact on their well-being and behavior/attitudes.

Next, we turn to adolescents, broadly defined as children the ages of 10 and 19. These children eventually learn to recognize and regulate emotions and deal with their situations (Pine et al. 2005). Thus, risk-taking behavior begins when adolescents experience increased novelty-seeking and interact more with their peers (Johnson et al. 2009). While adolescents are more vulnerable than young children to seeing and comprehending violence and its implications, they also have more robust support networks and social capital, which they have developed through peers, teachers, and family connections. While they still experience conflict and are affected by it, they experience it differently than younger children.

Looking at violence within the family more specifically, developmental differences in how children respond and internalize violence suggest that exposure to violence at a younger age will have a more significant impact on children. Young children are less in control of their situations and more dependent on their caregivers. They cannot easily avoid seeing or experiencing violence. As a result, they are more likely to become desensitized to violence. Young children are also more likely "to have and accept extreme beliefs regarding both gender superiority and the acceptability of violence" (Graham-Bermann & Brescoll, 2000, Edleson et al., 2007, as cited in Anthea et al. 2015). Older children are more mature and able to empathize with others. They are also more likely to be concerned about their parents and less likely to commit future violence (Deboard-Lucas & Grych, 2011).

Following this literature, we define two critical periods for exposure to conflict and formation of attitudes towards domestic violence: childhood, defined as birth through age nine, and adolescence, defined as ages 10 to 19. This definition also follows the one used by

the United Nations Children's Fund (Dahl et al. 2017). We examine how age at first exposure affects the formation of attitudes. This allows us to focus on narrower age groups. We start with the analysis for the two critical periods of childhood and adolescence that we just defined; then, we use four age periods of five years each: before age six (from birth through age five), ages six to 10, ages 11 to 15, and ages 16 to 20. Finally, we examine impacts of exposure based on age categories such as infancy (birth through age two), early childhood (three to eight years old), middle childhood (9 to 11 years old), and adolescence (12 to 18 years old).

2.1. Data and Empirical Strategy

3.1 Data

This section describes the data and key dependent variables used in the empirical analysis. To identify the impact of exposure to war, we combine data on the time, location, and intensity of armed conflict with individual data on women's acceptance of domestic violence.

Our source for conflict data is Version 4-2006 of the Uppsala Conflict Data Program/International Peace Research Institute Armed Conflict Dataset (UCDP/PRIO), which contains information on armed conflicts that occurred globally between 1946 and 2006 (Gleditsch et al. 2002). We use only data on conflicts in Sub-Saharan Africa. Armed conflict is defined as: *"a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths."* (Harbom and Högbladh (2006), p. 4). The unit of observation is a conflict-year event. Conflicts are classified into two categories—minor conflicts and wars—according to their intensity, which is measured by the number of battle deaths in a given year. Minor conflicts are associated with more than 25 and less than 1,000

battle deaths per conflict year, and wars are armed conflicts that are associated with 1,000 battle deaths or more per conflict year. We exploit conflict intensity in our analysis, as research has shown that increased conflict intensity is associated with more significant desensitization of population to violence (e.g., De Choudhury et al. 2014), which is likely to be associated with a greater acceptance of violence in society.

We use a geocoded version of the 2006 UCDP/PRIO data that provides information on the latitude, longitude, and radius of each conflict-year event. The geographic location of a conflict-year event, as indicated by its latitude and longitude, captures the mid-point of all battles associated with the conflict-year event. The area affected by the battles is measured by the radius, which is given in 50 km intervals. We refer to Adhvaryu and Fenske (forthcoming) and Raleigh et al. (2012) for detailed descriptions of the data set. Figure 1 shows the locations of all conflict events in Sub-Saharan Africa.

Data on attitudes toward domestic violence were obtained from the Demographic and Health Surveys, which are a set of nationally representative household surveys. The DHS is the only survey that provides information on attitudes toward domestic violence for a broad set of countries, thus allowing comparisons across countries and over time. We apply the following restrictions to select the surveys in our data set: First, we only use data from waves IV-VII. The reason is that earlier waves do not contain information on attitudes toward domestic violence. Second, we exclude surveys for which the geographic location of survey clusters is not available, as we cannot match them with conflict data. Third, we exclude DHS surveys from countries that did not experience conflict during the period from 1946 to 2006. The reason is that our empirical strategy relies on comparing survey clusters that were differentially affected by conflict within the same country. Table A.1 lists the 48 DHS surveys from the 23 countries included in the final data set.

Questions on attitudes towards wife-beating are asked to all women aged 15 to 49 in the selected households. Women are asked if spousal violence is justified in five different situations: if a woman neglects the children, burns the food, goes out without telling her husband, argues with him, or refuses to have sex. Our dependent variables are five binary indicators that equal one if the woman says that wife-beating is justified in each situation. We also summarize these five outcomes using a scale that combines the five binary indicators and is standardized to have the mean equal to zero and the standard deviation equal one (Larreguy and Marshall 2017).[2] The scale has a Cronbach's alpha inter-item reliability coefficient of 0.85 for women.

We merge the UCDP/PRIO with the DHS surveys in ArcGIS using the geographic location of survey clusters, which are equivalent to villages. More specifically, we create a circle ("buffer") around each conflict-year event using the latitude, longitude, and radius. We then merge these buffers with the survey clusters using a spatial join. We define a survey cluster as being affected by conflict in a specific year if the cluster falls entirely within the whole buffer of the conflict-year event, and the country is listed as conflict territory, meaning the territory over which the conflict is fought. Our key independent variables are two binary indicators for whether a cluster was affected by conflict when women were between birth and age nine or between the ages of 10 and 19, and their interaction.

Given that the radius of the conflict-year event is given in 50 km intervals in the UCDP/PRIO data, there is a concern that measurement error in the conflict variable may bias the estimates against finding an effect. Nonetheless, the UCDP/PRIO is the best data to study the impact of exposure to conflict during childhood on adult outcomes using data from a large set of countries, as it provides data starting from 1946. Alternative data sources, such as

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[2] The construction of the standardized scale follows Larreguy and Marshall (2017). The scale is constructed using the *alpha* command in Stata and is set equal to missing if any of the underlying indicators is missing.

UCDP/GED and ACLED, can provide a more precise location of conflict events, but do not begin until 1989 and 1996, respectively.

We restrict the sample to women who were born after 1946, as the UCDP/PRIO data set does not provide information on conflicts that happened before 1946. Similarly, we exclude women who were born after 1986, as the UCDP/PRIO data set does not provide information on conflicts that happened after 2006.

Table 1 provides summary statistics for the key independent variables. We first look at exposure to any conflict before age 20. We find that 54 percent of women were exposed to any conflict, which includes both minor conflicts and wars (Panel A). Next, we break exposure to any conflict into two age categories: birth through age nine and ages 10 to 19. Panel A shows that 34 percent of women were exposed by age nine, and 44 percent of them were exposed between the ages 10 and 19. These two variables are not mutually exclusive: a woman could have been exposed to conflict in both periods. For example, if a conflict began in a woman's region when she was eight, and it ended when she was 13, both variables are equal to one. We next distinguish between exposure to wars and exposure to minor conflicts before age 19. 49 percent of women were exposed to a minor conflict, and 25 percent of women were exposed to war before age 20. These variables are also not mutually exclusive: if both a minor conflict and a war occurred in the region when the woman was younger than 20, both variables are equal to one. Exposure to war is equal to one if a woman was exposed only to war or if she was exposed to *both* war and minor conflict; it is equal to zero if a woman was exposed only to minor conflict or if she was exposed to no conflict at all. Finally, we break exposure to war by age 19 into two age periods – from birth through age nine and from the ages of 10 to 19 – which again are not mutually exclusive. 14 percent of women were exposed to war by age nine, and 21 percent were exposed between the ages of 10 and 19.

We next focus on age at first exposure to war in Panel B. Given that a woman can be exposed to war for the first time only once, we can now define mutually exclusive categories. We focus on the age of first exposure to war rather than minor conflict. The reason is that we find that exposure to war is most relevant for the formation of attitudes towards domestic violence in childhood. 14 percent of all women in the sample were younger than 10 when they were first exposed to war. 11 percent were between the ages of 10 and 19. Furthermore, over 10 percent of women were younger than six when first exposed to war, and eight percent were younger than three. In sum, a substantial fraction of our sample was exposed to a high-intensity conflict (war) in early childhood.

Appendix Table A.1 displays average exposure to conflict and acceptance of domestic violence by survey. Angola, Ethiopia, and Mozambique have the highest proportions of the population exposed to conflict, with at least 90 percent of women exposed to conflict by age 19. In contrast, Gabon, Madagascar, and Lesotho have the lowest fraction of the population affected by conflict, with no more than 10 percent of women who exposed to conflict by age 19. On average, women report that wife-beating is justified in 1.67 situations. Guinea has the highest level of acceptance of domestic violence, while Mozambique has the lowest. When multiple surveys are available per country, we observe that acceptance of domestic violence decreases over time in every country but Guinea, Rwanda, and Senegal.

Table 2 displays the results of a t-test for differences in means of the primary dependent variables between women who were exposed to a conflict between birth and age 19 and women who were not. Being exposed to conflict between birth and age 19 is associated with a greater tolerance for domestic violence. In the next sections, we investigate this association using multivariate regression analysis.

3.2 Empirical Methods

To examine the impact of exposure to conflict at a young age on the formation of attitudes toward domestic violence later in life, we estimate variations of the following regression equation using a linear probability model (OLS):

$$Y_{isck} = \alpha + \beta_a Conflict_{ska} + \delta_{ck} + \gamma_s + X_{isck}'\theta + \varepsilon_{isck} \tag{1}$$

Y_{isck} is an outcome for an individual i who is living in survey cluster s in country c and is born in year k. $Conflict_{ska}$ is a binary indicator that equals one if cluster s was affected by conflict (any conflict, war, or minor conflict) when women born in year k were of age a, and zero otherwise. δ_{ck} is a country-specific year of birth fixed effect, which accounts for unobservable shocks affecting outcomes in the same way for all women born in the same country c in the same year k. It helps to control for changes in gender roles across birth cohorts within one country that may result, for instance, in younger cohorts being less likely to accept wife-beating than older cohorts (Arestoff and Djemai 2016). γ_s is a survey cluster fixed effect, controlling for unobservable factors common to all women living in the same cluster. X_{isck} is a vector of individual characteristics including a dummy variable for urban residence, dummy variables for age groups measured in five-year intervals, and dummy variables for religion.[3] We cluster the standard errors at the survey cluster level to account for within-cluster serial correlation (Bertrand et al. 2004).

The coefficient β_a measures the effect of conflict exposure on the outcome under the assumption that trends in attitudes towards domestic violence across birth cohorts would have followed the same trends in conflict-affected and non-affected survey clusters, had the conflict not occurred. As we examine the effect of conflict exposure in childhood on adult outcomes, and older waves of the DHS surveys do not contain information on attitudes

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[3] Dummies for religion include Christian and Muslim, with Other Religion as omitted category, and a binary indicator for whether the religion dummy is missing

towards domestic violence, we cannot use data that precede conflict to look at pre-trends. Therefore our identification strategy relies on within-cohort and within-clusters comparisons, while controlling for country-specific year of birth fixed effects. Due to a lack of information on place of birth and limited migration history, endogenous migration poses a threat to our identification strategy. We discuss the implications of this in Section 6.

In the first specification, we estimate Equation (1) for any conflict exposure before age 20. Next, we distinguish between exposure to war and minor conflict before age 20 by estimating the following regression:

$$Y_{isck} = \alpha + \beta_1 MinorConflict_{ska} + \beta_2 War_{ska} + \beta_3(War_{ska} \times MinorConflict_{ska}) + \delta_{ck} + \gamma_s + X_{isck}'\theta + \varepsilon_{isck}$$

β_1 estimates the effect of being exposed to minor conflict before age 20 without being exposed to war; β_2 estimates the effect of being exposed to war before age 20 without being exposed to minor conflict; β_3 estimates the additional effect of being exposed to minor conflict (war) for those that are also exposed to war (minor conflict). $(\beta_1+\beta_3)$ estimates the effect of minor conflict for those who are also exposed to war, and $(\beta_2+\beta_3)$ estimates the effect of war for those who are also exposed to minor conflict.

As the results show that exposure to war is more important than exposure to minor conflict, we next focus on exposure to war. We distinguish between its impact in two age periods before the age of 20. In this analysis, those that are exposed to minor conflict before age 20 without being also exposed to war are in the control group. We break the period from birth through age 19 into two different categories, following the definitions of childhood (from birth through age nine) and adolescence (from age 10 to 19). Exposure in these two age periods is not mutually exclusive, i.e., individuals can be exposed during both childhood and adolescence. We include an interaction term to capture complementarities between exposure

in different periods. We estimate the following specification:

$$Y_{isck} = \alpha + \beta_1 War0\_9_{sk} + \beta_2 War10\_19_{sk} + \beta_3 (War0\_9_{sk} \times War10\_19_{sk}) + \delta_{ck} + \gamma_s$$
$$+ X_{isck}'\theta + \varepsilon_{isck}$$

β_1 estimates the effect of being exposed to war before age 10 for those who were not exposed between the ages of 10 and 19; β_2 estimates the effect of being exposed to war between the ages of 10 and 19 for those who were not exposed before age 10. β_3 estimates the additional effect of being exposed to war before age 10 (between the ages of 10 and 19) for those who were also exposed to war between the ages of 10 and 19 (before age 10). $(\beta_1+\beta_3)$ estimates the effect of exposure to war between the ages of 10 and 19 on those who were exposed before age 10. $(\beta_2+\beta_3)$ estimates the effect of exposure to war before age 10 on those who were exposed between the ages of 10 and 19.

Finally, to examine exposure at different ages in a more granular way, we focus on age at first exposure. We define dummy variables for being exposed to war for the first time at a certain age. Given that a person can be exposed to war for the first time only once, the variables for exposure in different periods are mutually exclusive. In addition to looking at age at first exposure in childhood and adolescence, we use four age periods of five years each. We also examine impacts of exposure in infancy, early childhood, middle childhood, and adolescence.

4. Empirical Results

4.1 Attitudes towards domestic violence

Table 3 reports the results for women's attitudes toward domestic violence, as measured by the standardized scale. In Column 1, the estimated coefficient on exposure to any type of conflict by age 19 is small, negative and statistically insignificant. However, when we distinguish between different types of conflicts according to their intensity in Column 2, we find that being exposed to war increases acceptance of domestic violence, while being

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exposed to minor conflict has no effect. Being exposed to war before the age of 20 raises tolerance for domestic violence by three percent of a standard deviation.

Next, we examine the age intervals at which exposure to war has the most substantial effect (Column 3). In this analysis, the control group includes women who were exposed only to minor conflict, as well as women who were not exposed to any type of conflict. We find that for women who were exposed to war before age 10, acceptance of violence increases by 3.7 percent of a standard deviation (significant at the five percent level). However, the coefficients on exposure between birth and age 9 and between the ages of 10 and 19 are not statistically significantly different from each other at conventional values. In sum, Table 3 offers some evidence that war exposure in early life increases acceptance of domestic violence later in life; however, the estimated effects are not always statistically significant, and their magnitude is quite small.

In Table 4, we use indicators for wife-beating being justified in various situations as dependent variables to examine whether specific situations are driving the results for the standardized scale. In Panel A, we find that exposure to war before age 20 increases the probability that a respondent will affirm that wife-beating is justified when she argues with her husband (Col. 3), refuses sex (Col. 4) and burns the food (Col. 5). The estimated impact is about two percentage points, which is quite small relative to the sample mean. Exposure to minor conflict before age 20 does not have a statistically significant effect on tolerance for domestic violence.

In Panel B, the estimates show that exposure to war between birth and age nine raises the probability that women will report that domestic violence is justified in four out of five situations (Col. 2-5). The estimated effects range from 1.2 to 1.8 percentage points (or four percent to six percent relative to the sample mean). Exposure to war between the ages of 10 and 19 increases the probability that a woman will affirm that wife-beating is justified when

she refuses to have sex with her husband (statistically significant at 10 percent level), but has no statistically significant effect on other situations. Overall, the analysis confirms that childhood (from birth through age nine) is the most critical period for women's acceptance of domestic violence in adulthood; however, the effect is quite small in magnitude.

Next, we dig deeper into the question of which ages are most critical to the formation of attitudes by looking at ages of first exposure to conflict and examining narrower age intervals. Figures 2a-2d indicate that early life is the most critical period of attitude formation for women.[4] Being exposed to war for the first time between birth and age nine raises acceptance of wife-beating by 3.5 percent of a standard deviation (Column 1). Again, we find that the magnitude of the estimated effect for women is quite small. The estimated effect becomes larger as we narrow the age brackets. Being first exposed to war before age six raises tolerance for domestic violence by four percent of a standard deviation. Being first exposed before age three raises it by 4.8 percent of a standard deviation. Figure 2d shows that exposure to war before age six raises acceptance of wife-beating when the woman argues with her husband, refuses to have sex with him, or burns the food.

4.2 Mechanisms

The evidence reported thus far indicates that women who grew up during armed conflict display a greater tolerance for domestic violence. In this section, we explore potential mechanisms that may explain why women are more accepting of domestic violence. We explore four channels. First, we explore whether women who grew up during war receive less education. Second, we investigate whether a woman's exposure to conflict is correlated with the educational attainment of her partner. Third, we examine whether women get married at an earlier age. Finally, we look at differences in education and age between spouses. We find

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[4] Tables A2 and A3 in the Appendix report the regression results.

evidence in support of the first three mechanisms, and no statistically significant association between conflict exposure and the gap in age or education between partners. The results are reported in Tables 5 - 10.[5]

Previous research has shown that the pathways discussed above are important factors affecting a women's acceptance of domestic violence, and women's bargaining power more broadly. With respect to female education, Mocan and Cannonier (2012), Chicoine (2016) and Friedman et al. (2016) found increased educational attainment reduces women's acceptance of wife-beating. In contrast, Erten and Keskin (2016) found that women's educational attainment increased their likelihood of becoming a victim of psychological violence by their partner, but had no effect on physical violence, sexual violence or acceptance of domestic violence. Regarding age at marriage, previous research has shown that age at first marriage can serve as a predictor of lower bargaining power in marriage by women. Field and Ambrus (2008) found some evidence that early marriage reduces women's decision-making power within the household and restricts their mobility; while Chari et al. (2017) used a broader set of outcomes and found that the effect of age at marriage on women's decision-making power within the household is mixed. Turning to differences between partners, a few recent studies have suggested that differences in education and earnings between partners are associated with abuse and marital instability. Bertrand et al. (2015) showed that couples where the wife earns more than the husband are less satisfied with their marriage and are more likely to divorce. Cools and Kotsadam (2016) found that the incidence of domestic violence is greater in couples where one partner is more educated than other.

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[5] Another potential mechanism is an increase in violence among the woman's parents during her childhood. Information on domestic violence among parents is included in the questionnaire on domestic violence, but only one woman per household answers it, which gives a much smaller sample than the one used in the main analysis.

4.2.1 Educational attainment

Column 1 of Table 5 indicates that a woman's years of education decrease by 0.097 years (about 1.164 months) if she experiences any conflict between the ages of birth and 19. However, when we differentiate between a minor conflict and a war in Column 2, we observe that the negative effect of conflict on education stems from exposure to war, with education decreasing by 0.401 years (4.8 months) if a woman was exposed between the ages of birth and 19. Both effects reported above are statistically significant at the one percent level. Given that women in the sample, on average, achieved 4.31 years of education, we can infer that conflict exposure during schooling years reduces women's schooling by 2.2 to 9.3 percent relative to the sample mean.

In Column 3, we differentiate between exposure to war between birth and age nine and between the ages of 10 and 19. The results show that exposure between birth and age nine decreases educational attainment by 0.469 years for women who were not exposed between the ages of 10 and 19, and by a total of 0.225 years for women who were also exposed between the ages of 10 and 19 ($\beta_1 + \beta_3$). Exposure between the ages of 10 and 19 reduces schooling by 0.297 years for women who were not exposed before age 10, and by 0.053 years for women who were also exposed before age 10 ($\beta_2 + \beta_3$). These results suggest that the effect may not be linearly related to the amount of exposure, but to its timing.

Columns 1-3 in Table 6 report results for the effect of age at first exposure to war on educational attainment of women. The estimates indicate that exposure at all ages included in the empirical specification significantly reduces completed years of education, with a larger weight attributed to exposure before age 10.

4.2.3 Matching in the marriage market

Next, we examine the association between a woman's childhood exposure to conflict and the years of education achieved by her last husband/partner. Information on the educational attainment of the last husband/partner is asked of women who are currently married or living with a man, as well as women who were formerly married or living with a man. As a consequence, this analysis requires that we exclude from the sample women who were never married. Exposure to conflict may affect both the timing of marriage, as demonstrated for women in the next section, and the probability of ever getting married, which may potentially lead to a selected sample. Therefore the results presented in this section should be interpreted with caution.

Column 4 of Table 5 shows that a woman's exposure to any conflict does not have a statistically significant impact on her last husband/partner's educational attainment. Column 5 differentiates effects by type of conflict and shows that a woman's exposure to war between birth and age 19 is negatively associated with her last husband/partner's educational attainment, decreasing it by 0.276 years.

In Column 6, we split age at exposure to war into two sub-groups. We find that a woman's exposure to war between birth and age nine has a negative and statistically significant impact on her husband's educational attainment (-0.353) for women who were not exposed between the ages of 10 and 19. By contrast, exposure between the ages of 10 and 19 has a negative, but not statistically significant, impact on the educational achievement of the spouse for women who were not exposed before age 10. The interaction term between exposure to war between birth and age nine and between the ages of 10 and 19 is positive and statistically significant, suggesting that combined exposure in both periods has a lower impact on the husband's education level relative to exposure in only one period. In all of these regressions, we do not control for a woman's educational attainment.

In Columns 4-6 of Table 6, we look at the timing of the first war experience of a woman and her husband's educational attainment. We find that a woman's war exposure at an earlier age is consistently associated with fewer years of education accomplished by her spouse. Across all three columns, the coefficients on age at first war for younger age groups are higher in absolute value and statistically significantly different from zero at a higher threshold level than the estimated coefficients for the older age groups. For example, in Column 6, exposure between birth and age two and from age three to eight is associated with a decrease of 0.249 and 0.382 years respectively (significant at the one percent level). Meanwhile, exposure between the ages of nine and 11 is associated with a 0.194 year decrease in husband's education (significant at the 10 percent level). War exposure between the ages of 12 and 18 is associated with only a 0.033 year decrease in husband's education and the estimated coefficient is not statistically significantly different from zero.

Tables 7 and 8 report results for differences in educational attainment and age between a woman and her husband. Overall, we do not find strong evidence that a woman's exposure to conflict before age 20 affects differences in characteristics between spouses. Column 1 of Table 7 shows that any conflict before age 20 is positively associated with differences in education between husband and wife (statistically significant at 10% level), but when we distinguish between exposure to war and minor conflict, and exposure to war at different ages, all of the estimated coefficients are statistically insignificant. Table 8 shows that being exposed for the first time to war during adolescence increases differences in education and age between husband and wife (Columns 2 and 6); however, the results are not robust to using alternative age cutoffs.

4.2.2 Age at marriage

In our next set of regressions in Tables 9 and 10, we explore the relationship between conflict exposure and woman's age at first marriage. Table 9, Column 1, suggests that exposure to any conflict has no statistically significant impact on being married before age 20 (married at or before age 19). Next, we differentiate between a minor conflict and a war. Column 2 shows that exposure to war increases a woman's chance of being married before age 20 by 6.6 percentage points (significant at the one percent) for those not exposed to minor conflict, and by 4.8 percentage points for those exposed to minor conflict. On average, 60 percent of women get married before age 20, so these are sizable effects. In contrast, exposure to minor conflict reduces this chance by 1.2 percentage points (significant at the 5 percent level) for those not exposed to war.

Column 3 reports the results for exposure to war at different age periods. War exposure before age 10 increases the probability of getting married before age 20 by 6.3 percentage for women who were not exposed between the ages of 10 and 19. War exposure between the ages of 10 and 19 increases the likelihood of getting married before age 20 by 2.7 percentage points for women who were not exposed before age 10, but has no additional effect for women who were exposed before age 10. Therefore, the overall results suggest that being exposed to war has a statistically significant positive effect on the probability of being married before age 20 for women exposed to major conflict. They further suggest that childhood is the most critical age period.

Table 10 examines the effect of age at first exposure to war in childhood. Column 1 shows that a first exposure to war between birth and age 19 (between the ages of 10 and 19) raises the risk of marriage before age 20 by 6.4 (2.6) percentage points. The results in Column 2 show that being exposed to war for the first time between the ages of five and six; the ages of six and 10; or the ages of 11 and 15, increases the probability that a woman will

be married before age 20. In Column 3, we find that those who were exposed to war for the first time before age nine are more likely to marry early relative to those who were exposed later in adolescence.

In sum, the results suggest that reduced educational attainment and being married at an earlier age may be a plausible mechanism behind the increased acceptance of domestic violence for women who were exposed to conflict in childhood.

5. Threats to validity: Selective Migration

The DHS surveys contain information on the sub-national region of residence, but they do not provide information on region of birth and region of residence during childhood and adolescence. This data limitation raises concerns regarding measurement error in conflict exposure, as well as selection bias due to selective migration. Classical measurement error is of a lesser concern, as since we expect it to bias our estimates against finding an effect (attenuation bias). Selective migration could affect the composition of the population in conflict and non-conflict regions along dimensions that are not observable in the data. It may also be correlated with acceptance of domestic violence, leading to selection bias. For example, consider how two unobservable characteristics – social connections and vulnerability – may be related to both the probability of migration and acceptance of domestic violence. If women with fewer social connections lacked the means to migrate out of conflict-affected regions to non-affected regions, and social connections were negatively correlated with acceptance of domestic violence, then our estimates may be biased toward finding an effect. Alternatively, if more vulnerable women were more likely to migrate out of conflict-affected regions toward non-affected regions, and vulnerability was positively associated with acceptance of domestic violence, then our estimates would be biased against finding an effect.

We next turn to the data to learn more about the size and direction of the bias.[6] We exploit information on the number of years the respondent has lived in their current place of residence. We define "non-migrants" as those who have lived there since birth, and "migrants" as those who moved after birth.[7] This information is available only in selected surveys, about 60 percent of the sample size. Of this restricted sample, 44% of women had always lived in their current place of residence and are therefore classified as "non-migrants." For the sub-sample of non-migrants, the information on years spent in a respondent's current residence allows us to verify that the women exposed to conflict effectively lived in the affected villages at the time of the conflict.

Recognizing that women who have migrated may be different from the "stayers," we use Appendix Table A.4 to estimate the means and differences in observable characteristics between these sub-samples. Women who never migrated are less educated, younger, more likely to justify wife-beating, less likely to be Christian, and less likely to live in an urban area relative to those who migrated. These results suggest that non-migrants may be negatively selected in terms of socioeconomic status (less educated) and attitudes towards domestic violence (more tolerant).

Table 11 shows that our main regression results do not change when we restrict the sample to survey respondents who have always lived in their current place of residence. Given that the variable on years lived in the current place is not available for all surveys, we first re-run estimates for the restricted sub-sample of data (Column 1) and then further restrict our analytical sample to the non-migrants (Column 2). For women's attitudes, we replicate the results that we found in the main sample and show that the estimate is not affected when we restrict the sample to non-migrants (Table 11).

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[6] The analysis in this section follows Leon (2012).
[7] More specifically, we define an individual as having ever migrated if they responded that they have always lived in the current place of residence or if they have lived in the current place of residence for a number of years equal to or greater than their age.

6. Discussion and Conclusion

This paper studies how exposure to violence in childhood and adolescence affects tolerance for violent behavior in adulthood. We shed light on this question by examining the impact of armed conflict on women's attitudes toward domestic violence in Sub-Saharan Africa. Our results indicate that exposure to high intensity conflict (war) before age 20 increases acceptance of violence within the family. The effect is driven by exposure before age 10, which suggests that childhood, rather than adolescence, is the most critical period for the formation of attitudes toward wife-beating in conflict-affected regions. Looking at the effect of age at first exposure, we find that women who are exposed in early childhood – between birth and age two – are most vulnerable to internalizing surrounding violence. The estimated effects are quite small in magnitude – about four percent of a standard deviation – although measurement error in our measure of conflict exposure likely attenuates our estimates. Our empirical investigation of potential mechanisms suggests that education losses for women and their husbands during conflict and women's early marriages may be significant factors driving the estimated increase in tolerance for domestic violence.

Our findings suggest that policies targeting women who were exposed to war in childhood may be most effective in reducing acceptance of domestic violence in post-conflict settings. This is particularly true of programs that help children and adolescents complete their education and delay marriage. Our findings accentuate the idea that early childhood is a particularly critical period for the formation of attitudes towards violent behavior. Thus, we suggest that policies that provide stable and nurturing environments for young children and their caregivers during conflicts may help to lower future tolerance for violent behavior in the community. Given that young kids depend on their caregivers and the environment, and that

they cannot escape seeing or experiencing violence, they may become desensitized to violence as a defense mechanism.

Our analysis has some limitations. First, as in other studies of catastrophic events, such as famine and epidemics, our estimates are based on a sample of women who survived the conflict. This could potentially lead to bias if the probability of survival is correlated with attitudes toward domestic violence. Second, measurement error in the conflict data may bias the estimates against finding an effect. We note that the UCDP/PRIO data set is the only data set that allows us to estimate the effect of conflict in childhood on adult outcomes. Still, despite these limitations, our results show that an increase in tolerance for domestic violence is a potential pathway through which armed conflict can perpetuate cycles of violence in fragile states.

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Figures

Figure 1. Location of Conflict Events in Sub-Saharan Africa

Notes: The figure shows the location of conflict events that happened in Sub-Saharan Africa between 1946 and 2006, as recorded in the 2006 UCDP/PRIO data set.

Figure 2a Age at first war and women's acceptance of domestic violence
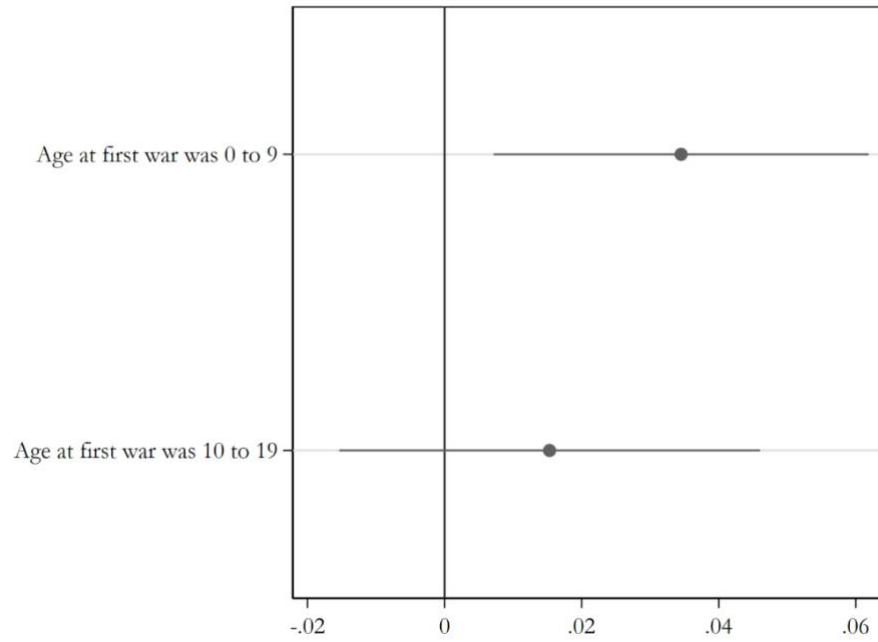
Figure 2b Age at first war and women's acceptance of domestic violence
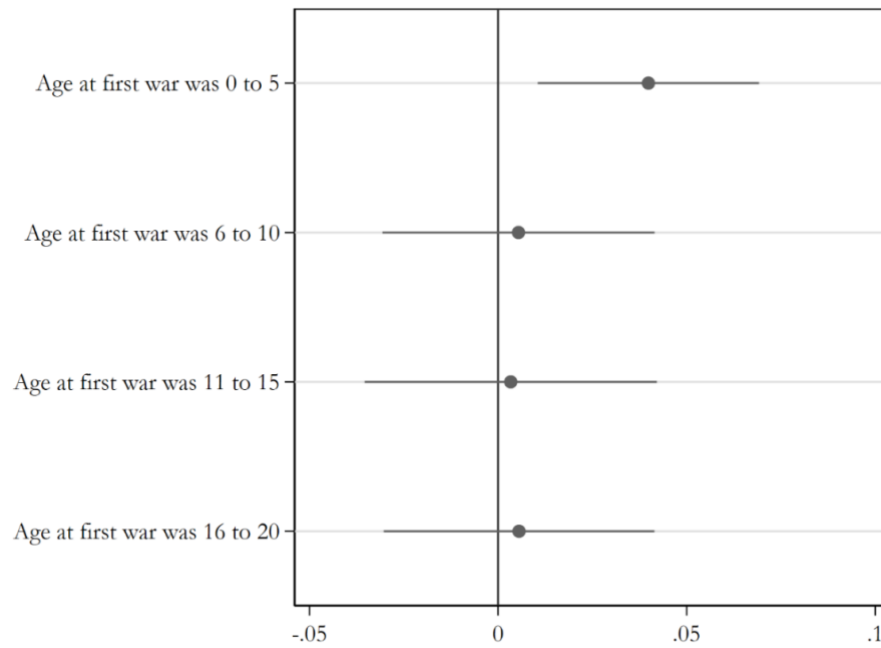
Figure 2c Age at first war and women's acceptance of domestic violence
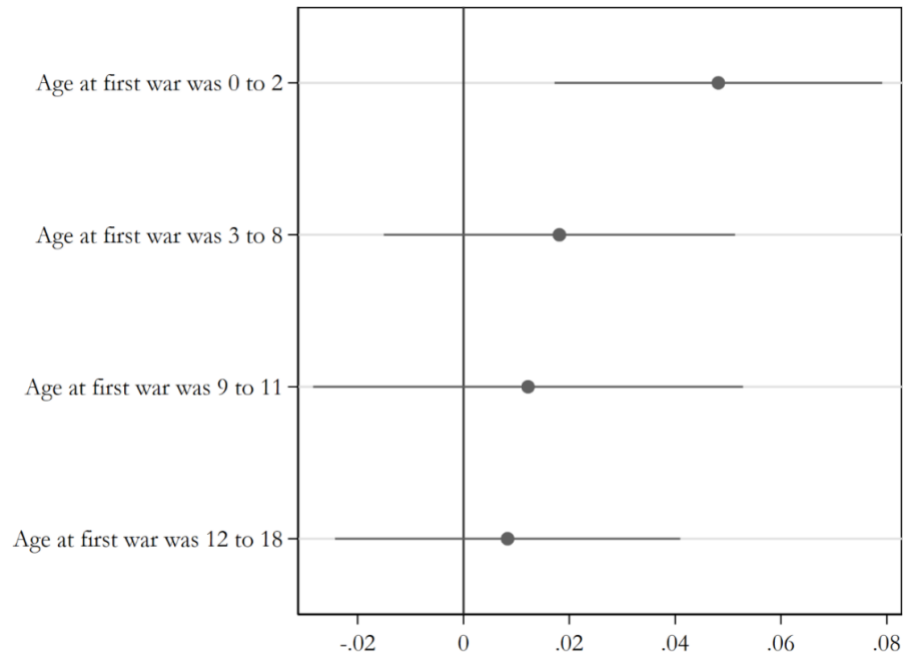
Figure 2d Age at first war and women's acceptance of domestic violence
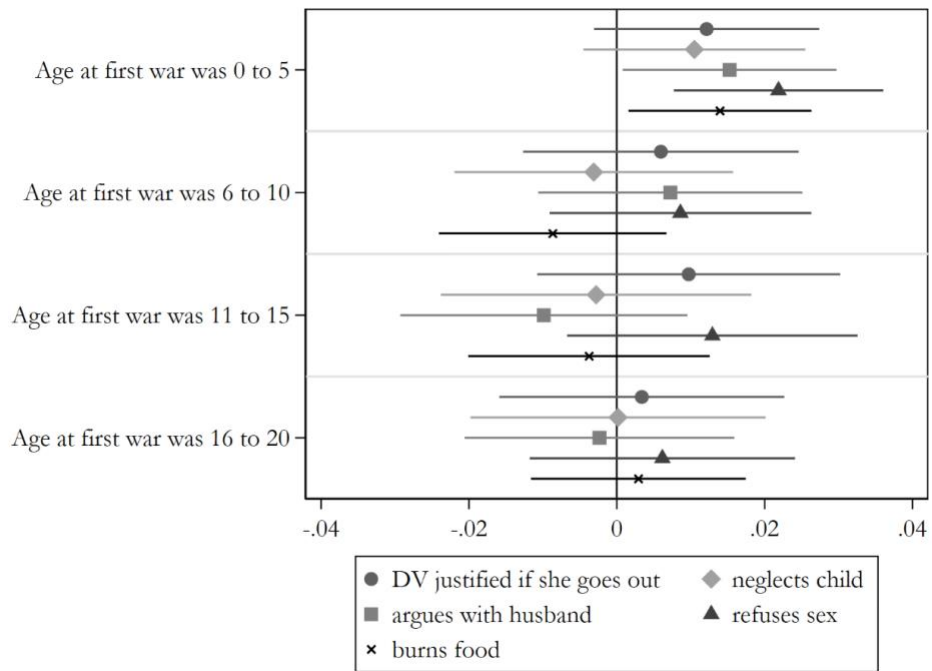
Notes: Figures 2a-2d display the estimates of regression coefficients from variations of Equation (1).

Table 1 - Descriptive Statistics

Women

Variable	Mean	St. dev.
Panel A: Exposure to conflict		
Exposure to any conflict at age 0 to 19 (1=yes, 0=no)	0.543	0.498
Exposure to any conflict at age 0 to 9 (1=yes, 0=no)	0.335	0.472
Exposure to any conflict at age 10 to 19 (1=yes, 0=no)	0.439	0.496
Exposure to minor conflict at age 0 to 19 (1=yes, 0=no)	0.492	0.500
Exposure to war at age 0 to 19 (1=yes, 0=no)	0.252	0.434
Exposure to war at age 0 to 9 (1=yes, 0=no)	0.143	0.351
Exposure to war at age 10 to 19 (1=yes, 0=no)	0.207	0.405
Panel B: Age at first exposure to war		
Age at first war was 0 to 9 (1=yes, 0=no)	0.143	0.351
Age at first war was 10 to 19 (1=yes, 0=no)	0.109	0.312
Age at first war was 0 to 5 (1=yes, 0=no)	0.107	0.309
Age at first war was 6 to 10 (1=yes, 0=no)	0.050	0.217
Age at first war was 11 to 15 (1=yes, 0=no)	0.054	0.227
Age at first war was 16 to 20 (1=yes, 0=no)	0.051	0.220
Age at first war was 0 to 2 (1=yes, 0=no)	0.080	0.271
Age at first war was 3 to 8 (1=yes, 0=no)	0.054	0.226
Age at first war was 9 to 11 (1=yes, 0=no)	0.033	0.179
Age at first war was 12 to 18 (1=yes, 0=no)	0.076	0.265
Number of observations	321,437	

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. Minor conflicts are defined as armed conflicts with more than 25 and less than 1,000 battle deaths per conflict year. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year.

Table 2 - Balancing Test

Women Not Exposed to Conflict at age 0-19 (1) vs Women Exposed to Conflict (2)

Variable	Mean (1)	Mean (2)	Diff.	p-value	Obs. (1)	Obs. (2)
Attitudes scale	0.022	-0.040	0.062***	0	146,762	174,675
Wife-beating is justified if she …						
… goes out without telling him	0.371	0.389	-0.018***	0	146,762	174,675
… neglects the children	0.415	0.432	-0.017***	0	146,762	174,675
… argues with him	0.340	0.356	-0.016***	0	146,762	174,675
… refuses to have sex with him	0.297	0.301	-0.004*	0.015	146,762	174,675
… burns the food	0.197	0.232	-0.034***	0	146,762	174,675

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1.

Table 3 - Exposure to conflict and women's attitudes towards domestic violence.

	(1)	(2)	(3)
	Dependent variable: Attitudes scale		
Exposure to any conflict at age 0 to 19	-0.002		
	(0.008)		
Exposure to minor conflict at age 0 to 19 (β_1)		-0.007	
		(0.009)	
Exposure to war at age 0 to 19 (β_2)		0.030*	
		(0.017)	
Minor 0-19 X War 0-19 (β_3)		-0.001	
		(0.016)	
Exposure to war at age 0 to 9 (β_1)			0.037**
			(0.015)
Exposure to war at age 10 to 19 (β_2)			0.013
			(0.016)
War 0-9 X War 10-19 (β_3)			-0.021
			(0.019)
Observations	321,437	321,437	321,437
R-squared	0.387	0.387	0.387
Test $\beta_1 + \beta_3 = 0$ (p-value)		0.527	0.301
Test $\beta_2 + \beta_3 = 0$ (p-value)		0.038	0.577
Test $\beta_1 = \beta_2$ (p-value)		0.031	0.158

*** p<0.01, ** p<0.05, * p<0.1

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. Minor conflicts are defined as armed conflicts with more than 25 and less than 1,000 battle deaths per conflict year. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from an OLS regressions. The dependent variable is a standardized scale combining indicator variables that take the value of one if the respondent says that spousal violence is justified if a woman neglects the children, burns the food, goes out without telling her husband, argues with him or refuses to have sex. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing.

Table 4 - Exposure to conflict and women's attitudes towards domestic violence (Indicators)

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Wife-beating is justified if she				
	goes out without telling him	neglects the children	argues with him	refuses to have sex with him	burns the food
Panel A					
Exposure to minor conflict at age 0 to 19 (β_1)	-0.001	-0.003	-0.004	-0.002	-0.004
	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)
Exposure to war at age 0 to 19 (β_2)	0.005	0.003	0.018**	0.016**	0.016**
	(0.009)	(0.009)	(0.008)	(0.008)	(0.007)
Minor 0-19 X War 0-19 (β_3)	0.006	0.007	-0.009	0.002	-0.009
	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)
R-squared	0.299	0.275	0.309	0.312	0.308
Test $\beta_1 + \beta_3 = 0$ (p-value)	0.483	0.660	0.070	0.993	0.064
Test $\beta_2 + \beta_3 = 0$ (p-value)	0.165	0.204	0.215	0.010	0.182
Test $\beta_1 = \beta_2$ (p-value)	0.593	0.493	0.014	0.032	0.009
Panel B					
Exposure to war at age 0 to 9 (β_1)	0.009	0.015*	0.016**	0.018**	0.012*
	(0.008)	(0.008)	(0.007)	(0.007)	(0.006)
Exposure to war at age 10 to 19 (β_2)	0.009	-0.001	0.002	0.014*	0.005
	(0.009)	(0.009)	(0.008)	(0.008)	(0.007)
War 0-9 X War 10-19 (β_3)	-0.007	-0.010	-0.003	-0.011	-0.011
	(0.010)	(0.010)	(0.010)	(0.009)	(0.008)
R-squared	0.299	0.275	0.309	0.312	0.308
Test $\beta_1 + \beta_3 = 0$ (p-value)	0.871	0.520	0.0763	0.430	0.661
Test $\beta_2 + \beta_3 = 0$ (p-value)	0.758	0.165	0.557	0.865	0.597
Test $\beta_1 = \beta_2$ (p-value)	0.904	0.0719	0.0367	0.578	0.386
Observations	331,019	331,435	330,226	327,379	330,746
Mean of dependent variable	0.381	0.424	0.349	0.299	0.216

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. Minor conflicts are defined as armed conflicts with more than 25 and less than 1,000 battle deaths per conflict year. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing.

Table 5 – Exposure to conflict and educational attainment

Independent variables: woman's exposure to	(1)	(2)	(3)	(4)	(5)	(6)
			Dependent variable:			
	Woman's completed years of education (mean=4.31)			Husband's completed years of education (mean=5.2)		
any conflict at age 0 to 19	-0.097***			-0.017		
	(0.035)			(0.043)		
minor conflict at age 0 to 19 (β_1)		-0.020			0.039	
		(0.037)			(0.045)	
war at age 0 to 19 (β_2)		-0.401***			-0.276***	
		(0.079)			(0.092)	
minor 0-19 X war 0-19 (β_3)		-0.009			0.026	
		(0.071)			(0.082)	
war at age 0 to 9 (β_1)			-0.469***			-0.353***
			(0.071)			(0.083)
war at age 10 to 19 (β_2)			-0.297***			-0.105
			(0.070)			(0.081)
war 0-9 X war 10-19 (β_3)			0.244***			0.230**
			(0.081)			(0.095)
Test $\beta_1+\beta_3=0$ (p-value)		0.654	0		0.376	0.085
Test $\beta_2+\beta_3=0$ (p-value)		0	0.408		0.001	0.098
Test $\beta_1=\beta_2$ (p-value)		0	0.018		0.001	0.004
Observations	321,239	321,239	321,239	269,176	269,176	269,176
R-squared	0.581	0.581	0.581	0.543	0.543	0.543

*** p<0.01, ** p<0.05, * p<0.1.

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. In Columns 4-6, women who were never married and women who do not report their husband's education are excluded from the sample. Minor conflicts are defined as armed conflicts with more than 25 and less than 1,000 battle deaths per conflict year. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing.

Table 6 – Age at first conflict and education

Independent variables: woman's age at first war was	(1)	(2)	(3)	(4)	(5)	(6)
			Dependent variable:			
	Woman's completed years of education (mean=4.31)			Husband's completed years of education (mean=5.2)		
0 to 9	-0.487***			-0.311***		
	(0.066)			(0.076)		
10 to 19	-0.282***			-0.142*		
	(0.068)			(0.078)		
0 to 5		-0.489***			-0.329***	
		(0.070)			(0.082)	
6 to 10		-0.491***			-0.292***	
		(0.081)			(0.093)	
11 to 15		-0.344***			-0.086	
		(0.082)			(0.095)	
16 to 20		-0.221***			-0.158*	
		(0.077)			(0.090)	
0 to 2			-0.426***			-0.249***
			(0.071)			(0.084)
3 to 8			-0.514***			-0.382***
			(0.078)			(0.089)
9 to 11			-0.375***			-0.194*
			(0.083)			(0.099)
12 to 18			-0.196***			-0.033
			(0.071)			(0.081)
Observations	321,239	321,239	321,239	269,176	269,176	269,176
R-squared	0.581	0.581	0.581	0.543	0.543	0.543

*** p<0.01, ** p<0.05, * p<0.1.
Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. In Columns 4-6, women who were never married and women who do not report their husband's education are excluded from the sample. Minor conflicts are defined as armed conflicts with more than 25 and less than 1,000 battle deaths per conflict year. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing.

Table 7 – Exposure to conflict and differences in education and age between husband and wife

Independent variables: woman's exposure to	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable:					
	Difference in completed years of education between husband and wife (mean=1.316)			Difference in age between husband and wife (mean=8.326)		
any conflict at age 0 to 19	0.071*			-0.019		
	(0.041)			(0.089)		
minor conflict at age 0 to 19 (β_1)		0.057			-0.009	
		(0.043)			(0.093)	
war at age 0 to 19 (β_2)		0.117			0.013	
		(0.091)			(0.180)	
minor 0-19 X war 0-19 (β_3)		-0.033			0.125	
		(0.079)			(0.167)	
war at age 0 to 9 (β_1)			0.076			0.180
			(0.081)			(0.156)
war at age 10 to 19 (β_2)			0.125			0.034
			(0.081)			(0.165)
war 0-9 X war 10-19 (β_3)			-0.042			-0.265
			(0.094)			(0.192)
Test $\beta_1+\beta_3=0$ (p-value)		0.733	0.635		0.431	0.595
Test $\beta_2+\beta_3=0$ (p-value)		0.239	0.255		0.335	0.135
Test $\beta_1=\beta_2$ (p-value)		0.508	0.571		0.901	0.409
Observations	269,019	269,019	269,019	243,155	243,155	243,155
R-squared	0.201	0.201	0.201	0.218	0.218	0.218

*** p<0.01, ** p<0.05, * p<0.1.

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. Women who were never married and women who do not report their husband's education or age are excluded from the sample. Minor conflicts are defined as armed conflicts with more than 25 and less than 1,000 battle deaths per conflict year. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing.

Table 8 – Age at first conflict and differences in education and age between husband and wife

Independent variables: woman's age at first war was	(1)	(2)	(3)	(4)	(5)	(6)
			Dependent variable:			
	Difference in completed years of education between husband and wife (mean=1.316)			Difference in age between husband and wife (mean=8.326)		
0 to 9	0.104			0.105		
	(0.075)			(0.148)		
10 to 19	0.101			0.102		
	(0.078)			(0.158)		
0 to 5		0.105			0.174	
		(0.080)			(0.158)	
6 to 10		0.130			0.017	
		(0.089)			(0.198)	
11 to 15		0.240**			0.191	
		(0.094)			(0.211)	
16 to 20		0.039			-0.075	
		(0.090)			(0.188)	
0 to 2			0.070			0.224
			(0.081)			(0.164)
3 to 8			0.111			0.241
			(0.086)			(0.180)
9 to 11			0.101			0.471**
			(0.098)			(0.220)
12 to 18			0.112			0.384**
			(0.081)			(0.175)
Observations	269,019	269,019	269,019	243,155	243,155	243,155
R-squared	0.201	0.201	0.201	0.218	0.218	0.218

*** p<0.01, ** p<0.05, * p<0.1.

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. Women who were never married and women who do not report their husband's education or age are excluded from the sample. Minor conflicts are defined as armed conflicts with more than 25 and less than 1,000 battle deaths per conflict year. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing.

Table 9 – Exposure to conflict and women's timing of marriage

	(1)	(2)	(3)
	Dependent variable:		
	Married before age 20 (mean=0.599)		
Exposure to any conflict at age 0 to 19	-0.001		
	(0.005)		
Exposure to minor conflict at age 0 to 19 (β_1)		-0.012**	
		(0.005)	
Exposure to war at age 0 to 19 (β_2)		0.066***	
		(0.011)	
Minor conflict 0-19 X War 0-19 (β_3)		-0.018*	
		(0.009)	
Exposure to war at age 0 to 9 (β_1)			0.063***
			(0.010)
Exposure to war at age 10 to 19 (β_2)			0.027***
			(0.010)
War 0-9 X War 10-19 (β_3)			-0.025**
			(0.011)
Test $\beta_1 + \beta_3 = 0$ (p-value)		0	0
Test $\beta_2 + \beta_3 = 0$ (p-value)		0	0.762
Test $\beta_1 = \beta_2$ (p-value)		0	0
Observations	305,024	305,024	305,024
R-squared	0.251	0.251	0.251

*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. Minor conflicts are defined as armed conflicts with more than 25 and less than 1,000 battle deaths per conflict year. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing. Sample: women age 19 and above.

Table 10 – Woman's age at first conflict and timing of marriage

	(1)	(2)	(3)
	Dependent variable: Married before age 20 (mean=0.599)		
Age at first war was 0 to 9	0.064***		
	(0.009)		
Age at first war was 10 to 19	0.026***		
	(0.009)		
Age at first war was 0 to 5		0.069***	
		(0.009)	
Age at first war was 6 to 10		0.050***	
		(0.011)	
Age at first war was 11 to 15		0.046***	
		(0.012)	
Age at first war was 16 to 20		0.017	
		(0.011)	
Age at first war was 0 to 2			0.065***
			(0.010)
Age at first war was 3 to 8			0.066***
			(0.010)
Age at first war was 9 to 11			0.026**
			(0.013)
Age at first war was 12 to 18			0.028***
			(0.010)
Observations	305,024	305,024	305,024
R-squared	0.251	0.251	0.251

*** p<0.01, ** p<0.05, * p<0.1.

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. Minor conflicts are defined as armed conflicts with more than 25 and less than 1,000 battle deaths per conflict year. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing. Sample: women age 19 and above.

Table 11 - War exposure and women's attitudes by migration status

	(1)	(2)
	Dependent variable:	
	All survey respondents (Migration sample)	Respondents who have always lived in the current place of residence (Non-migrants)
Panel A		
Exposure to war at age 0 to 9	0.045**	0.055*
	(0.020)	(0.033)
Exposure to war at age 10 to 19	0.010	0.013
	(0.021)	(0.035)
War 0-9 X War 10-19	-0.018	-0.018
	(0.026)	(0.042)
R-squared	0.380	0.463
Panel B		
Age at first war was 0 to 9	0.042**	0.053*
	(0.018)	(0.030)
Age at first war was 10 to 19	0.012	0.015
	(0.021)	(0.034)
R-squared	0.380	0.463
Panel C		
Age at first war was 0 to 5	0.052***	0.068**
	(0.020)	(0.032)
Age at first war was 6 to 10	0.006	-0.018
	(0.024)	(0.038)
Age at first war was 11 to 15	0.008	0.011
	(0.025)	(0.041)
Age at first war was 16 to 20	-0.002	-0.013
	(0.025)	(0.041)
R-squared	0.380	0.463
Panel D		
Age at first war was 0 to 2	0.063***	0.076**
	(0.021)	(0.034)
Age at first war was 3 to 8	0.021	0.030
	(0.022)	(0.036)
Age at first war was 9 to 11	-0.005	0.012
	(0.029)	(0.047)
Age at first war was 12 to 18	0.018	0.031
	(0.022)	(0.037)
R-squared	0.380	0.463
Observations	191,121	84,301

*** p<0.01, ** p<0.05, * p<0.1.

Note: Migration sample – sample of countries that included data on migration of survey respondents. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing. Sample: currently married or in-union women.

Appendix

Table A.1 - Summary statistics by survey

Country	Year	N. obs	Average conflict exposure at age 0-19	Average number of situations wife-beating is justified
Angola	2015	5,582	0.98	0.78
Burkina Faso	2003	6,509	0.13	2.43
Burkina Faso	2010	6,423	0.18	1.36
Burundi	2010	5,294	0.66	2.05
Burundi	2016	7,022	0.69	1.73
Cameroon	2004	5,562	0.39	1.46
Cameroon	2011	5,352	0.35	1.13
Comoros	2012	2,074	0.71	0.93
Cote d'Ivoire	2012	5,558	0.25	1.42
D.R.C.	2007	6,626	0.62	2.29
D.R.C.	2013	8,616	0.63	2.25
Ethiopia	2000	14,241	0.67	2.72
Ethiopia	2005	13,062	0.77	2.58
Ethiopia	2010	14,047	0.85	2.19
Ethiopia	2016	10,508	0.90	1.85
Gabon	2012	1,514	0.04	1.07
Ghana	2003	3,604	0.77	1.04
Ghana	2008	2,386	0.74	0.76
Ghana	2014	3,473	0.70	0.55
Guinea	2005	4,371	0.53	3.18
Guinea	2012	3,521	0.49	3.69
Kenya	2003	5,811	0.33	1.78
Kenya	2008	4,407	0.27	1.28
Kenya	2014	5,902	0.19	1.17
Lesotho	2004	5,575	0.10	1.34
Lesotho	2009	4,655	0.13	0.83
Lesotho	2014	3,068	0.15	0.64
Liberia	2007	5,011	0.75	1.75
Liberia	2013	5,114	0.83	1.18
Madagascar	2008	10,920	0.05	0.66
Mali	2001	5,258	0.57	3.23
Mali	2006	6,006	0.69	2.17
Mozambique	2011	7,857	0.96	0.34
Nigeria	2003	6,388	0.25	2.02
Nigeria	2008	21,663	0.23	1.40
Nigeria	2013	19,619	0.18	1.04
Rwanda	2005	8,519	0.57	0.93
Rwanda	2010	8,260	0.67	1.66
Rwanda	2014	6,661	0.76	1.01

Senegal	2005	3,992	0.66	2.34
Senegal	2010	3,864	0.75	2.61
Sierra Leone	2008	4,678	0.67	2.19
Sierra Leone	2013	7,132	0.74	1.99
Togo	2013	1,749	0.88	0.52
Uganda	2000	5,827	0.77	1.98
Uganda	2006	5,850	0.86	2.03
Uganda	2011	4,900	0.88	1.39
Uganda	2016	7,406	0.87	1.24
Total		321,437	0.54	1.67

Notes: The sample includes all women born after 1946 and before 1987.

Table A2 - Age at first war and women's attitudes towards domestic violence (attitudes scale).

	(1)	(2)	(3)
	Dependent variable: Attitudes scale		
Age at first war was 0 to 9	0.035**		
	(0.014)		
Age at first war was 10 to 19	0.015		
	(0.016)		
Age at first war was 0 to 5		0.040***	
		(0.015)	
Age at first war was 6 to 10		0.005	
		(0.018)	
Age at first war was 11 to 15		0.003	
		(0.020)	
Age at first war was 16 to 20		0.006	
		(0.018)	
Age at first war was 0 to 2			0.048***
			(0.016)
Age at first war was 3 to 8			0.018
			(0.017)
Age at first war was 9 to 11			0.012
			(0.021)
Age at first war was 12 to 18			0.008
			(0.017)
Observations	321,437	321,437	321,437
R-squared	0.387	0.387	0.387

*** p<0.01, ** p<0.05, * p<0.1

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from an OLS regressions. The dependent variable is a standardized scale combining indicator variables that take the value of one if the respondent says that spousal violence is justified if a woman neglects the children, burns the food, goes out without telling her husband, argues with him or refuses having sex. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing.

Table A3 - Age at first war and women's attitudes (binary indicators).

	(1)	(2)	(3)	(4)	(5)
	Dependent variable: Wife-beating is justified if she				
	goes out without telling him	neglects the children	argues with him	refuses to have sex with him	burns the food
Panel A					
Age at first war was 0 to 9	0.010	0.011	0.016**	0.019***	0.010*
	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)
Age at first war was 10 to 19	0.009	0.002	0.003	0.013*	0.007
	(0.008)	(0.008)	(0.008)	(0.008)	(0.006)
R-squared	0.299	0.275	0.309	0.312	0.308
Panel B					
Age at first war was 0 to 5	0.014*	0.011	0.015**	0.021***	0.014**
	(0.008)	(0.007)	(0.007)	(0.007)	(0.006)
Age at first war was 6 to 10	0.008	-0.005	0.009	0.010	-0.008
	(0.009)	(0.009)	(0.009)	(0.009)	(0.008)
Age at first war was 11 to 15	0.010	-0.003	-0.008	0.012	-0.003
	(0.010)	(0.011)	(0.010)	(0.010)	(0.008)
Age at first war was 16 to 20	0.004	-0.000	-0.000	0.007	0.003
	(0.010)	(0.010)	(0.009)	(0.009)	(0.007)
R-squared	0.299	0.275	0.309	0.312	0.308
Panel C					
Age at first war was 0 to 2	0.013	0.011	0.019**	0.025***	0.019***
	(0.008)	(0.008)	(0.008)	(0.007)	(0.007)
Age at first war was 3 to 8	0.008	0.012	0.012	0.008	0.000
	(0.009)	(0.008)	(0.008)	(0.008)	(0.007)
Age at first war was 9 to 11	0.015	0.003	0.004	0.009	-0.000
	(0.011)	(0.011)	(0.010)	(0.010)	(0.009)
Age at first war was 12 to 18	0.004	-0.000	0.001	0.012	-0.000
	(0.009)	(0.009)	(0.008)	(0.008)	(0.007)
R-squared	0.299	0.275	0.309	0.312	0.308
Observations	331,019	331,435	330,226	327,379	330,746

*** p<0.01, ** p<0.05, * p<0.1

Notes: The sample includes all women born after 1946 and before 1987 in the DHS surveys listed in Appendix Table A.1. Wars are defined as armed conflicts with 1,000 battle deaths or more per conflict year. The table shows coefficients from an OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster. All regressions control for country-specific year of birth fixed effects, survey cluster fixed effect, dummies for age groups measured in five-year intervals, dummies for religion (Christian and Muslim, with Other Religion as the omitted category), and a binary indicator for whether the religion dummy is missing.

Appendix Table A4 – Migrant Balancing Characteristics

	(1) Mean for migrants	(2) Mean for non-migrants	(3) Difference In means	(4) p-value	(5) N. obs. (migrants)	(6) N. obs. (non-migrants).
Attitudes scale	0.024	0.125	-0.101***	0.000	106,820	84,301
Beating is justified if she goes out without telling him	0.397	0.432	-0.034***	0.000	106,820	84,301
Beating is justified if she neglects the children	0.454	0.462	-0.008***	0.000	106,820	84,301
Beating is justified if she argues with him	0.349	0.390	-0.041***	0.000	106,820	84,301
Beating is justified if she refuses to have sex with him	0.300	0.344	-0.044***	0.000	106,820	84,301
Beating is justified if she burns the food	0.214	0.272	-0.059***	0.000	106,820	84,301
Christian	0.669	0.578	0.092***	0.000	106,820	84,301
Muslim	0.267	0.328	-0.061***	0.000	106,820	84,301
other religion	0.036	0.059	-0.023***	0.000	106,820	84,301
missing religion	0.027	0.035	-0.008***	0.000	106,820	84,301
Urban	0.373	0.274	0.099***	0.000	106,820	84,301
Woman's age	31.990	31.169	0.820***	0.000	106,820	84,301
Education years	4.779	3.549	1.231***	0.000	106,736	84,244

*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Notes: For the definition of migration, we use information on the number of years the respondent has lived in the current place of residence and define "non-migrants" as those who have lived there since birth, and "migrants" as those who have moved after birth. This information is available only in selected surveys, about 60 percent of the sample size. The table shows coefficients from an OLS regressions. Standard errors in parenthesis are clustered at the level of the DHS cluster.