

Effect of Violence against Women on Victims and their Children

Evidence from Central America, the
Dominican Republic, and Haiti

Boaz Anglade
Julia Escobar

Country Department
Central America, Haiti,
Mexico, Panama and the
Dominican Republic

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Abstract¹

This paper presents a systematic overview of the evidence of violence against women in the Central America, Mexico, Panama, Haiti, and Dominican Republic region and examines its impact on the well-being of women and their children. Population-based surveys show that violence against women remains a widespread issue in the region. The proportion of women who have experienced physical or sexual violence at least once in their lifetime varies between 13% and 53%; Panama has the lowest rate while Mexico and El Salvador have the highest. The percentage of women who have experienced violence within private spheres ranges between 17% and 24%. Also, homicidal violence targeting women remains a major problem in the region. Using a novel propensity score reweighting technique, we assess the impact of violence on a series of outcome variables related to a woman's health and socioeconomic condition. We find evidence that violence against women negatively affects victims' reproductive and physical health as well as their fertility preferences. We also find evidence that violence against mothers has an adverse effect on children's advancement in school and overall health.

Classification JEL: C50, I10, I30, J16

Keywords: *intimate partner violence, gender-based violence, violence against women, femicide, covariate balancing, propensity score reweighting.*

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Introduction

Violence against women (VAW) is not just a flagrant violation of human rights but also a serious issue affecting both public health and the economic development of countries. It is defined as any act of violence based on gender that results in physical, sexual, or psychological harm or suffering to women. In the literature, the terms violence against women and gender-based violence (GBV) are often used interchangeably as evidence from around the world points out that violence based on gender is an issue that affects women disproportionately. Whereas men are more likely to experience violence due to conflict and crime, women are more likely to experience sexual violence and violence from individuals in their close circle (Bott et al., 2012). VAW is therefore deeply rooted in inequality and is a consequence of the unequal distribution of power between the sexes.

VAW is an issue prevalent throughout the world, in both low- and high-income countries, with serious consequences for women's health and overall well-being. One of the most common forms of VAW is intimate partner violence (IPV). It refers to any abusive behavior by a current or previous intimate partner that causes physical, sexual, or psychological harm. While the VAW measure paints a full picture of the extent of violence experienced by women in everyday life (inside and outside of the home), the IPV measure focuses on occurrences inside the home and in intimate circles. A multi-country study published in 2005 by the World Health Organization (WHO), using a standard instrument, shows IPV prevalence rates ranging from 15 to as high as 71%. A subsequent 2013 report indicates that one in three women globally have experienced violence at least once in their lifetime at the hand of an intimate partner. Violence against women is a source of concern in many developing regions globally, particularly in Latin America. The 2013 WHO report classifies the Americas (LAC) as the next highest region in terms of IPV prevalence (30%), following the African, Eastern Mediterranean, and South-East Asian regions. Femicide, defined as homicidal violence targeting women, is the most extreme type of violence against women and a major concern in the LAC region. The Central American countries of Honduras and El Salvador, in particular, have the highest rates of femicide in the region (Figure A4).

In recent years, there has been increasing interest from academic researchers and policymakers alike in documenting and assessing the impact of gender-based violence on individuals' well-being, particularly women. Several studies on VAW have been conducted in developed and developing contexts, and important strides have been made over the years in the quantity and rigor of data collected. The number of countries with national VAW estimates has grown considerably over the years. From 1995 to 2014, 102 countries have conducted at least one VAW survey, either separately or as a module to a larger household survey (United Nations, 2015). Some important methodological advances have also been made in addressing various well-known difficulties attached to collecting data in developing countries, particularly issues related to ethics in data collection and sensitivity of information. One of the remaining challenges to researchers is the difficulty in comparing estimates across geography and time. Given that data collection efforts rely on different methodologies, estimates are sometimes presented in diverse ways, and researchers and policymakers often lack access to comparable estimates even when reliable data

exist. For example, different survey methodologies use different definitions of partnership status and collect information based on different age groups, different forms of violence, different partnership status (current partner or most recent partnership), and different time frame of perpetration (at least once in a lifetime or in the 12 months prior to data collection).

Why should we be interested in assessing the economic impact of VAW in the first place? VAW not only represents a threat to public health and safety but can also have serious consequences on economic variables, thus impeding progress towards economic development. VAW can have significant costs to an economy in terms of loss of income, decreased productivity, increased expenditure on services, and decrease in human capital formation, among other things. On a microeconomic level, its consequences can be wide-ranging and long-lasting on victims and their children's well-being. Studies have shown that violence leads to serious adverse outcomes impacting women's reproductive, mental, and physical health (Day et al., 2005). It has serious public health ramifications as well, given that it increases the risk of morbidity and mortality among women (Heise et al., 2002). Violence also has intergenerational effects. There is overwhelming evidence that children who witness violence are at an increased risk of becoming victims or even aggressors themselves; they are also more prone to perform poorly in school, thus limiting their future labor market possibilities (Morrison & Biehl, 1999). Research on the consequences of violence is important and should be encouraged. Existing efforts to prevent and end VAW will be limited without an understanding of the impact of such violence. Findings could allow policymakers and practitioners to provide more comprehensive responses to gender-based violence issues and could also help guide future initiatives.

This paper provides an overview of the evidence on violence against women in the Central America, Mexico, Panama, the Dominican Republic, and Haiti (henceforth CID) region. As such, we conduct a systematic review of the prevalence of VAW across countries in the region and over time. We consider two forms of violence: physical and sexual (both over a lifetime and in the past 12 months) and discuss two VAW measurements: a broader VAW prevalence measure and a narrower IPV measure. We also take a closer look at the prevalence of femicide, which is also a serious issue affecting the region. Further, we assess the impact of VAW on various outcomes related to women's socioeconomic and health conditions and their children's development. Although this chapter covers countries in the CID region, the empirical analysis is restricted to four countries (Haiti, Dominican Republic, Guatemala, Honduras) for which comparable data are readily available.

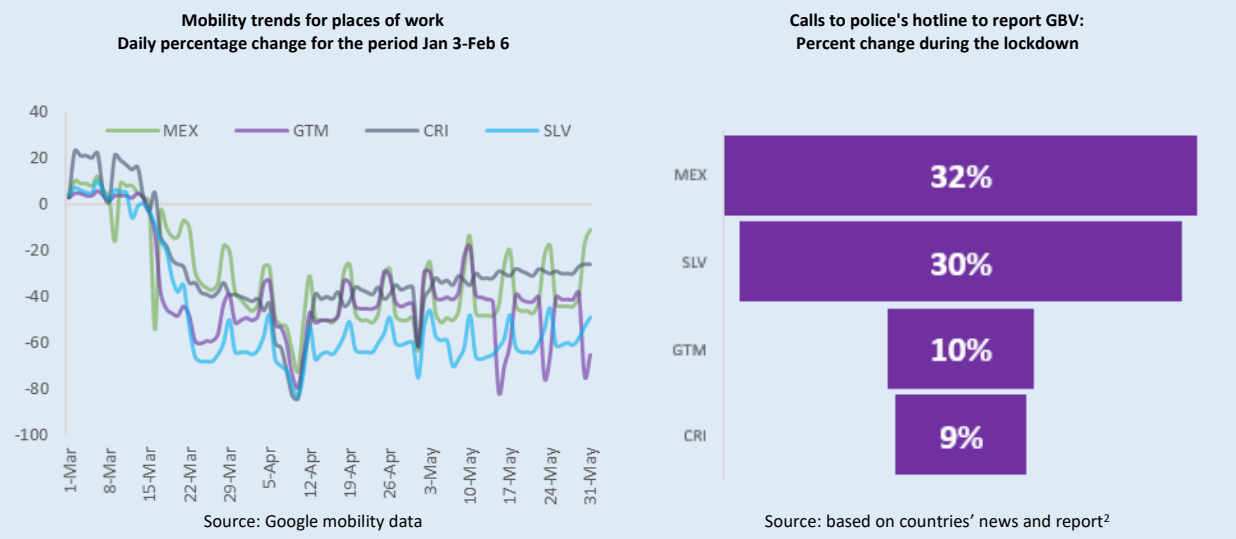
VAW in the Context of COVID-19

On March 11, 2020, the World Health Organization declared COVID-19, a viral respiratory infection, a global pandemic. Governments around the world imposed mandatory lockdowns and shelter-in-place measures to mitigate the propagation of the viral disease. The pandemic has brought to the fore of public consciousness the bitter realization that home is not always a safe space for many women, and restrictive or quarantine measures can come with increased risks for women and girls.

With the social distancing measures and mobility restrictions (Left chart) implemented in Central America and Mexico came a significant increase in calls to domestic violence helplines (right chart). Mexico experienced a 32% jump in domestic violence calls during the lockdown. Central American countries such as Guatemala, El Salvador, and Costa Rica also reported a 9% to 30% increase in calls to police helplines. In Brazil, reports of domestic violence increased by 40% to 50%; calls to domestic violence hotlines also increased in Argentina (40%) (Campbell, 2020).

Recent empirical research based on reported crime and service call data shows compelling evidence of the impact of the lockdown on VAW. Using police calls for service logs for 15 large cities in the United States, Leslie & Wilson (2020) find that the lockdown due to COVID-19 has led to a 10.2% increase in domestic violence calls for service or 3.3 additional incidents per day on average. Mohler et al. (2020) also show a significant increase in reported domestic violence incidents in two large American cities. In Argentina, a recent paper finds a significant increase of 28% in calls to the domestic violence helpline following the mobility restrictions (Perez-Vincent et al., 2020). Using a new victimization survey conducted after the lockdown, the authors also show a positive association between mobility restrictions and IPV, as evidenced by a comparison of women whose partners were exempt from complying with the restrictive orders and women whose partners were not exempt.

These grim statistics reflect what has been long-recognized in the literature: there exists a link between crises and gender-based violence (John et al., 2020). For instance, as quarantine measures were imposed during the 2014-2016 Ebola crisis, women and girls in West Africa experienced more sexual violence and exploitation (Onyango et al., 2019). Stress, economic anxiety, alcohol, and isolation are some of the factors that explain gender-based violence and are often catalyzed by national crises. The global socioeconomic shock resulting from the pandemic is expected to affect women disproportionately and cut down the progress made over the past decades on gender parity. In coordination with the private sector, some countries are boosting efforts to adapt services to ensure that women can still access them. For instance, in Argentina, Avon has launched a nationwide campaign to raise awareness about domestic violence and promote services oriented towards women.



² Mexico: K. García, and V. Rojas, "La Violencia incrementó en la cuarentena más llamadas de auxilio y más búsquedas en Google," *El Economista*.

El Salvador: M. Nóchez and V. Gúzman, "La violencia contra la mujer no encontró amparo durante la cuarentena," *El Faro*.

Guatemala: UN. 2020. Guatemala: COVID-19 Informe de situación No. 04. United Nations.

Costa Rica: UNDP. 2020. Análisis trimestral de seguridad ciudadana y respuesta ante el COVID-19. United Nations Development Programme

Our paper provides a major contribution to the literature in that we use a novel technique for impact assessment, Covariate Balancing Propensity Score (CBPS), to minimize selection bias and address the usual issue of confoundedness. Past studies on the impact of violence have used either an instrumental variable approach (Fajardo-Gonzalez, 2020) or propensity score matching (Morrison & Orlando, 2004). As we discuss in the methodology section, this new propensity score reweighting method, as proposed by Imai & Ratkovic (2014), is an improvement over the usual models used in non-experimental impact assessments of violence given its robustness to misspecification. The paper is organized as follows. First, we present a systematic review of the evidence on the prevalence, trends, and correlates of VAW in the region. Second, we discuss a theoretical framework linking violence to welfare outcomes and review previous studies on the impact of VAW on women and their children's well-being. The section that follows discusses the empirical data and the methodology for a non-experimental impact assessment. Next, we present the results and conclude.

VAW in the CID Region

As in many other parts of the world, VAW is a prevalent and common issue in the CID region. This section presents an overview of VAW in CID by summarizing what is known about the prevalence and trends of VAW in the region based on the most recent nationally representative population-based data for each country. One of the major issues in a multi-country comparative assessment of the prevalence of VAW is the comparability of data across both settings and studies. Studies such as the WHO Multi-country Study on Women's Health and Domestic Violence and GENACIS (Gender, Alcohol, and Culture) collect comparable data using a standardized questionnaire but have certain limitations. The WHO studies include a limited set of countries in the LAC region, and the GENACIS is not representative at the national level. We conducted our systematic overview by compiling existing evidence from both surveys and reports from the region. Table A1 provides the sources of the data used.

This section focuses on two series of indicators commonly used in measuring violence against women: prevalence of VAW and prevalence of IPV. We define prevalence of VAW as the proportion of women who have reported having experienced at least one act of violence (physical and/or sexual) committed by an intimate partner or someone else at any point from age 15. The prevalence of IPV has a similar definition but is restricted to violence suffered at the hand of an intimate partner (current or most recent if not currently in a union). The surveys used in this comparative analysis measure physical and sexual violence similarly, making our analysis comparable across countries. Respondents were asked whether they had experienced specific acts of violence, although the surveys did not all measure the same acts of violence.³

Figure 1 shows the most recent VAW prevalence rates, over a lifetime and in the past 12 months, for countries in the CID region. We choose this indicator due to the large overlap between physical and sexual violence in most countries and to facilitate cross-country comparisons since it

³ See Croft et al.'s (2018) *Guide to DHS Statistics 7* for an example of the list of acts classified as physical and sexual violence.

is the most frequently used standardized measure. The proportion of women in the region who have experienced violence based on gender at least once in their lifetime varies between 7% and 53%. Based on the most recent data, Panama has the lowest rate while Mexico and El Salvador have the highest. For the prevalence of VAW in the past 12 months, we find rates ranging from 5% to 14%. While Panama has the lowest incidence, Mexico, El Salvador, and the Dominican Republic have the highest.

Despite consistent efforts to address violence against women in both public and private spheres, the data from nationally representative surveys fail to show a consistent reduction in VAW prevalence over time across countries. Figure A1 shows changes in lifetime prevalence of VAW from previous comparable surveys, indicating longer-term changes in VAW across countries. We restrict this analysis to countries with at least two rounds of comparable datasets collected over the last 20 years. The prevalence of VAW in Honduras increased from 16% in 2005 to 27% in 2007. In Mexico, it increased from 17% to 34% from 2011 to 2016. We also observe an upward trend in Guatemala and the Dominican Republic. The data for Nicaragua and Panama, however, show a downward trend.

Intimate partner violence (IPV) captures violence experienced by women in private spheres, at the hands of intimate partners. It is the most common form of gender-based violence and the most pervasive type of violence in the LAC region (Heinemann & Vener, 2006). Figure A2 shows IPV prevalence rates (over a lifetime and in the past 12 months) ranging from 16% to 24% for countries in the region, a level that is below the world average prevalence rate (30%). Women in Panama and El Salvador have the lowest IPV prevalence rate, while women in Haiti and Nicaragua have the highest. Focusing on IPV prevalence over the past 12 months, the rates vary between 5% and 16%. The lowest rate is registered in El Salvador and the highest in the Dominican Republic.

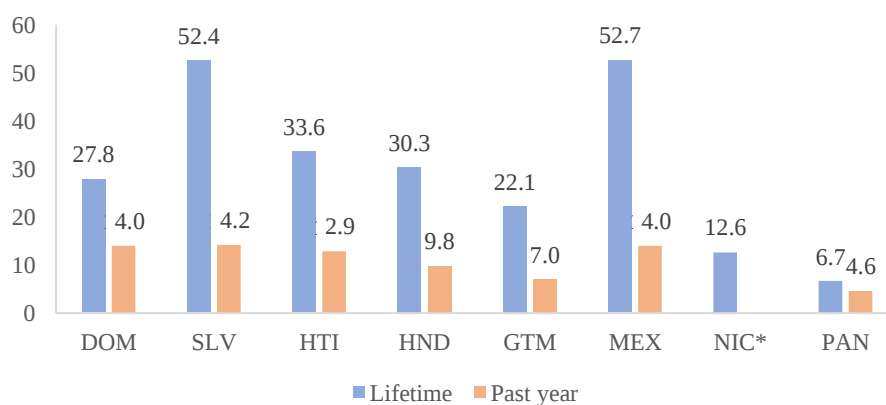
From a comparison of VAW and IPV prevalence across countries, we conclude that IPV is indeed a pervasive problem in the region. In Mexico and El Salvador, the issue of VAW is particularly prevalent outside of the home, with high rates of sexual violence against women in working and communal environments.⁴ In Mexico, for instance, public transportation is a space where sexual harassment occurs frequently. According to the 2016 National Survey of Victimization and Perceptions of Safety (ENVIPE), more than 87% of women feel unsafe when using public transportation in Mexico for their daily commutes. A comparison between lifetime and past 12 months prevalence rates across countries allows us to observe newer term changes, including different life experiences of young women compared to older cohorts. Judging by the minimal difference between prevalence rate for the past 12 months and prevalence over the lifetime, we conclude that VAW, and IPV especially, remains a persistent and chronic problem in the Dominican Republic in particular. This result corroborates the finding that IPV prevalence rates in the Dominican Republic have been on an upward trend in recent years.

⁴ The Salvador and Mexico questionnaires follow a unique format and collect information on the violence women face in different life environments (family, school, work, and community). The final reports of these surveys show high rates of sexual VAW in communal environments.

Femicide is a major issue in the Latin American region, particularly in the Central American countries of Honduras and El Salvador, where it occurs at a significantly higher rate compared to other countries in the region. Figure A4 shows the femicide rates for several countries in the LAC region. El Salvador, Honduras, and Guatemala have the highest rates of these types of violence, while countries such as Costa Rica and Panama have the lowest rates. To reduce these crimes, several countries in the region are taking important steps, including the classification of femicide as a separate criminal offense and the adoption of minimum and maximum mandatory sentencing.

Drawing from the most recent Demographic and Health Surveys (DHS), we conduct bivariate analyses to examine the relationship between some key socio-demographic variables and VAW prevalence over a lifetime (Figure A5). The choice of the variables considered in this section was informed by a review of the literature on the correlates of VAW. This analysis is based on data from four countries (Haiti, Dominican Republic, Honduras, and Guatemala) for which comparable data exist. The disaggregated VAW prevalence rates were averaged across countries. The raw data reveal that women in the region who live in rural areas have a lower average prevalence rate than women living in urban regions. Women below the age of 30 also tend to experience violence at a lower proportion than women above 30. We also observe differences in VAW prevalence rates based on marital status. Women who are separated, divorced, or widowed have a higher average prevalence rate compared to other groups. As opposed to being married, those in a consensual union are more prone to experience violence on average. Educational attainment seems to be correlated with the risk of experiencing violence. More years of schooling is associated with lower odds of experiencing violence on average. Wealth status appears to be correlated with the prevalence of VAW as well. Women who live in wealthy households tend to have a lower average incidence rate; although comparing wealth quintiles 1 and 4, there appears to be no difference. Last, the data show that women who are employed have a higher prevalence rate on average than those who are not employed.

Figure 1 –Prevalence of VAW in CID Countries (Physical or Sexual Violence)



Sources: See Table A1

* Only lifetime violence data is available for Nicaragua. Only Physical violence for Panama

Laws, Policies, and Programs to End VAW

In 1993, through the signing of the Declaration on the Elimination of Violence against Women, the United Nations officially recognized VAW as a public concern and asserted women's right to "live a life free of violence." A year later, in Brazil, several countries across the LAC region adopted the "Inter-American Convention on the Prevention, Punishment, and Eradication of Violence against Women" (also known as the convention of Belém do Pará). In 2015, the United Nations' member states renewed their commitment to end VAW through the Sustainable Development Goals for 2030.⁵ Several countries have also agreed to improve their data collection system and measure their advancement using a single indicator (Bott et al., 2019). More than twenty years after Belém do Pará, the LAC region has made bold advances in the fight to end violence against women and girls, although much remains to be achieved. As of 2020, the 1994 convention has been ratified by 32 out of 33 countries in the LAC region, except Cuba. Also, almost all countries have enacted national plans to prevent and end violence; some of these plans are designed to address VAW specifically.

The international community's recognition of VAW as a public health issue ignited a series of legislation in the mid-1990s aimed at protecting and promoting the rights of women in the region. These laws, often referred to as first-generation laws, guaranteed protection for women against violence experienced in private spheres (domestic violence). Belize, Costa-Rica, Dominican Republic, Haiti, and Honduras are countries in the region that rely exclusively on first-generation laws (Essayag, 2017). A few years later, a second wave of legislation arose to address the narrowness of first-generation laws. These legislations, known as second-generation laws, extended protection to women against various forms of violence experienced in various environments, even forms of violence that were not emphasized in Belém do Pará.⁶ Some of these laws consider the diversity of women as a social group, recognizing that violence does not affect all women equally. Today, only Mexico, El Salvador, Guatemala, Nicaragua, and Panama have adopted these more comprehensive laws on VAW. Eight countries in the region have enacted laws on femicide. These laws come in the form of amendments to current penal codes to legally classify the crime of "aggravated homicide based on gender" (CEPAL, 2015). The Belém do Pará convention also encouraged states to adopt and implement policies to prevent, punish, and eradicate violence based on gender. All countries in the CID region have enacted a national plan and adopted public policies to address the issue of VAW. The national plans often propose activities in the medium and long term to address violence against women and are often constructed as public policy tools with measurable results.

States in concert with civil society and the private sector also implement actions to end VAW through diverse programs and services. Most of these programs fall into the categories of prevention, care, or punishment. When it comes to prevention, the main programs focus on sensitization campaigns, trainings, and dissemination of values and practices through media. In

⁵ Pan American Health Organization (PAHO) and WHO member nations also pledged their commitment to end VAW in their respective countries.

⁶ One such form of VAW is patrimonial violence --- the violation of women's property rights—which is a continuing issue with significant effects on the lives of women in the region.

Mexico, for instance, the *Amor, Pero del Bueno* program sought to prevent violence in intimate partnerships among adolescents. The program educated middle school and high school students on gender roles and stereotypes and promoted awareness in the educational community. It resulted in a 58% reduction in the percentage of psychological violence perpetrated by young men in relationships and contributed to a reduction in the acceptance of violence and sexism among young people (Sosa-Rubi et al., 2017). On the issue of care, the main strategy is to create service centers for victims of violence. In some countries, integrated services for women are provided in the form of a one-stop service center equipped with medical and psychological care as well as legal aid. This is the case of *Ciudad Mujer*, a “one-stop shop” model of integrated service delivery in El Salvador that offers multiple services to women, including gender-based violence support. An impact evaluation of the *Ciudad Mujer* program shows that it was effective in increasing women’s demand for specialized public services and improving participants’ overall life satisfaction (Bustelo et al., 2019). Another form of care program is establishing 24-hour national telephone helplines dedicated to victims of violence; *Linea Vida* in the Dominican Republic is a good example of this type of initiative. As to the theme of punishment, programs mostly focus on the toughening of penalties for offenders and reinforcing the justice system to address violence against women more effectively. In Guatemala, for instance, the government has created specialized units to combat the femicide phenomenon.

Impact of VAW: Theoretical Framework

The impact of VAW on economic variables is a subject that piques the interest of both academics and policymakers. However, the link between gender-based violence and economic development is not always clear-cut, which might explain why the issue of violence is often invisible in national strategic plans to boost economic growth. Yet, gender-based violence has implications for economic development through various mechanisms. In a report commissioned by the World Bank, Duvvury et al. (2013) elaborate a model establishing the links between gender-based violence and economic development by discussing some important variables that mediate the impact of violence at the individual level to the macroeconomic level. In the authors’ view, economic outcomes can be affected if there is an overall change in human capital, trauma, or shift in intra-household gender dynamics due to violence. These same pathways can help us understand how violence can impact women’s socioeconomic outcomes and their children’s development.

An individual’s human capital, defined as the knowledge and abilities used in the production of goods and services, is often shaped by his or her health condition and education, both of which can be significantly impacted by previous experiences with violence. Acts of violence can impact an individual’s health (mental and physical) and education, which in turn might impact his or her employment and acquisition of skills, among other capabilities. The impact of gender-based violence on the health of victims is well documented in the literature. Studies have shown that victims of violence, IPV in particular, are more likely to use health services (Bonomi et al., 2006) and experience psychological trauma (Swanberg et al., 2005). Violence can also negatively impact the health of the children of victims (Agüero, 2013; Morrison and Orlando, 2004; Bogat et al., 2006). Studies have also shown an impact on the educational performance and

behavior of children of victims. Arias (2004) finds that children of women who are victims of IPV are more likely to skip school relative to the children of non-victims.

If gender-based violence does not affect an individual's human endowment, it can inflict trauma, which might impact their productivity and/or employment stability. The experience of violence, either constant or occasional, can instill fear, stress, and anxiety in a person. These psychological outcomes can have serious impacts on the person's productivity and human capital development. Several studies have shown a correlation between psychological violence and labor market outcomes. Kimerling et al. (2009) show that psychological violence was a stronger correlate of unemployment than physical violence in the United States. Sabia et al. (2013) find that sexual violence is associated with a 6.6% decline in labor force participation in the United States.

The last pathway is through changes in intra-household gender dynamics. The exertion of violence against women can change the balance of power within households and consequently put women at a disadvantage (Duvvury et al., 2013). For instance, a loss of bargaining power and decision-making capabilities for women might result in loss of opportunity in the job market and significant household resource allocation changes. Such shift in power balance could lead to lower investment in children's education and lower nutrition, considering existing evidence showing that a greater share of household resources under the control of women is associated with greater investment in children's well-being (Rao, 1998).

Impact of VAW on Women's and Children's Outcomes: Review of the Literature

There is a well-known literature on the impact of violence on socioeconomic outcomes. So far, two streams of research have emerged from these studies: one that focuses on estimating the direct economic costs of violence by attaching a monetary value to its impacts, and another that estimates the indirect costs of violence to society. The latter type of research has focused on analyzing the impact of violence on women's reproductive, mental, and physical health and socioeconomic outcomes such as educational attainment, labor force participation, and earnings. The consensus in the literature is that violence has a negative effect on productive outcomes, with consequences being more serious in the area of reproductive health.

The impact of gender-based violence on the health of victims is largely documented in the literature. Research has shown that women who are victims of violence have a higher likelihood of experiencing stress, fear, depression, and other psychological trauma (Swanberg et al., 2005). The negative impact of violence on women's reproductive health is also evident throughout the literature. Women who are victims of violence have a higher risk of adverse pregnancy outcomes (Heise et al., 2002), substance abuse (Heise et al., 1999), cardiovascular disease (Campbell, 2002), among other things. In a study on the impact of VAW in the Latin American region, Agüero (2013) finds a negative association between violence and a series of women's health outcomes. Women who are victims of violence have lower hemoglobin levels and are therefore more likely to be anemic, an effect that the author finds to be more pronounced at the bottom of the distribution. Morrison and Orlando (2004) also find inferior health outcomes for women victims of violence in

Peru. Abused women are more likely to have an unwanted last-child, more likely to have a sexually transmitted disease, and more likely to have terminated a pregnancy before term.

Regarding the relationship between violence and labor market outcomes, the empirical evidence is mixed. While it is widely argued that violence has a negative impact on labor force participation (Lloyd, 1997; Lloyd & Taluc, 1999; Meisel et al., 2003), some studies have shown a positive correlation between the two variables (Agüero, 2013; Fajardo-Gonzalez, 2020). In the Latin American context specifically, Rios-Avila & Canavire-Bacarreza (2017) analyze the heterogeneous effect of intimate partner violence on women's job exit in Bolivia. They find that violence impacts job exit positively, more so among non-indigenous women. Similar results are found in Peru, where being a victim of violence increases the probability of job exit for women (Sierra, 2015). On the other hand, studies such as Morrison & Orlando (1999) and Agüero (2013) find intimate partner violence to be positively associated with labor force participation; in other words, abused partnered women are more likely to work than non-abused partnered women. Similarly, using the most recent DHS for Colombia, Fajardo-Gonzalez (2020) finds a positive relationship between domestic violence and women's employment even after correcting for endogeneity. Agüero (2013) hypothesizes that part of the effect of violence on women's labor supply might be due to changing marital status (from marriage to divorce). Using mediation analysis, Fajardo-Gonzalez (2020) shows that the positive association between IPV and women's employment could be explained by a desire to enhance their bargaining power in the hope of exiting abusive relationships.

When it comes to the impact of VAW on workers' productivity, the literature has shown a negative correlation (Swanberg et al., 2005; Reeves, 2004). Existing research has shown that victims of violence often experience a higher level of distraction and are more frequently absent from work due to physical abuse or threat of violence (Logan et al., 2007). The evidence on the impact of violence on employment instability is also clear. Victims who experience gender-based violence have higher rates of absenteeism and tardiness with significant impact on job performance. Women who are victims of gender-based violence are more likely to lose their jobs and experience a higher turnover than non-victims (Bell, 2003; Meisel et al., 2003; Swanberg et al., 2005). VAW has also been shown to have a negative impact on women's earnings through missed paid work (Duvvury et al., 2012). Indeed, VAW comes at a high cost to businesses and the economy overall. A series of recent studies have empirically assessed the business costs of VAW in several South American countries. In Peru, it is estimated that IPV is responsible for 70 million lost workdays per year, which amounts to approximately 6.7 billion dollars or 3.7% of the country's GDP (Vara Horna, 2013). In Paraguay, IPV costs businesses an estimated 734.9 million dollars per year, equivalent to 6.46% of GDP (Brendel & Heikel, 2015).

VAW can also have intergenerational effects; when women experience violence, their children also suffer. Several studies have examined the impact of exposure to violence on the health of children. Most of them have concluded that children exposed to violence are less healthy than those who are not exposed to violence. For instance, Agüero (2013) finds that children whose mothers are victims of violence fare worse in health outcomes before and after birth. While in utero, children of abused women are less likely to have the required four or more prenatal visits.

Once born, they are less likely to be vaccinated, more likely to have had diarrhea in the past 15 days, and more likely to be underweight compared to children of non-abused women. In Peru, Morrison and Orlando (2004) also find that the children of abused women have a higher likelihood of suffering from diarrhea and fare worse in anthropometric measures. They were, however, more likely to be vaccinated compared to the children of non-abused women. In the United States, Bogat et al. (2006) find children of victims to be more prone to experiencing trauma from hearing and witnessing abuse.

There is also evidence that exposure to violence can affect the educational attainment and behavior of children. Arias (2004) finds that the children of women who are victims of violence are more likely to skip school and suffer poorer health than the children of non-victims. Research in Nicaragua has also shown that the children of victims are more likely to repeat a school year and drop out of school early (Morrison and Orlando, 1999). Absenteeism from school is also an issue among children of victims. Emery (2011) studies children in one American city and shows truancy to be higher among children of victims. It has also been shown that children who are exposed to violent behaviors have a greater tendency to imitate and reproduce the cycle of violence witnessed (Enlow et al., 2012).

Methodology: Non-Experimental Impact Assessment

Empirical studies aiming to assess the indirect costs of gender-based violence often resort to a comparison between a group of women who have suffered from violence to a control group (women who have not suffered from violence) in a non-experimental format, since a randomized controlled experiment in this context would be both impractical and unethical. In such a case, the statistical difference in a particular outcome between the control and treatment groups would inform whether there is an impact. These studies, however, often suffer from the issue of selection bias ever-present in non-experimental impact assessments and evaluation studies. The sample of women who report having experienced violence is often dissimilar to the control group in terms of characteristics, thus rendering the effect of violence hard to isolate. Another concern in these types of exercises is the presence of endogeneity between the outcome variable and VAW. For instance, considering the outcome variable “participation in the labor market,” violence perpetrated against a woman within the household might force her to enter or leave the labor market. By the same token, women’s participation in the labor market might itself be a cause of violence (Morrison et al., 2007; Hjort & Villander, 2012).

One way of addressing the reverse causality and selection bias issues is to use an instrumental variable (IV) approach, often through a two-stage linear probability model (see Fajardo-Gonzalez, 2020). The instrumental variable must satisfy the exclusion principle, meaning that it must not directly influence the outcome under study but must be correlated to the treatment or grouping variable. However, the IV method must be used with extreme caution given the practical problems one can encounter in identifying valid instrumental variables (Crown et al., 2011). More rigorous studies make use of the statistical technique of matching to address the sample selection issue (Morrison and Orlando, 2004). The Propensity Score Matching (PSM)

technique allows researchers to construct sets of individuals from treatment and control groups that share similar characteristics. Using scores based on the probability of suffering violence, each individual in the treatment group is matched with an individual in the control group with the closest propensity scores. PSM has two important properties. It satisfies the “common support” condition, which is necessary for an appropriate comparison of treatment and control groups. Given its non-parametric nature, it also bypasses the complications of the choice of functional form and the complexities of using instrumental variables (Sánchez & Ribero, 2004). The PSM method is not without criticism. It often requires a larger sample, as observations that fail to be matched are often excluded, and can be sensitive to omitted variable bias. Inverse probability weights based on propensity scores can also be used to address endogeneity and selection bias concerns. This technique, known as propensity score reweighting (PSR), allows a researcher to create balanced treatment and control groups that simulate random allocation of subjects similar to the PSM method. The PSR has a major advantage over the PSM method in the sense that it retains all the observations, which helps maintain statistical power to detect a treatment effect (Stone and Tang, 2013).

One of the goals of this chapter is to estimate the impact of violence on a series of key outcomes related to women's reproductive health and socioeconomic condition. We intend to assess differences in outcomes between two groups of women: those who have experienced IPV in the past 12 months and those who have not. Also, we will assess differences in outcomes related to children's health and education between two groups of children: those whose mothers have experienced IPV in the past 12 months and those whose mothers have not.⁷ To deal with the issues of confoundedness, we use a novel methodology, Covariate Balancing Propensity Score (CBPS), as proposed by Imai & Ratkovic (2014), to produce comparable estimates of the impact of violence in four countries in the region: Haiti, Guatemala, Honduras, and the Dominican Republic. Standard propensity score models maximize the likelihood function's empirical fit to optimize treatment status prediction, but covariate balance is not always addressed. CBPS optimizes the covariate balance while modeling the treatment assignment, allowing near-perfect covariate balance between control and treatment groups. The CBPS is a significant improvement over the PSM and standard PSR methods, given its robustness to the propensity score model's misspecification. In a simulation study, Imai & Ratkovic (2014) find that CBPS performs better than other propensity score models in terms of bias and mean square error. Therefore, this nascent method has been used in several studies in various applied disciplines to deal with confoundedness when assessing causal effects using observational data (see Albanese et al., 2021; Ehrenthal et al., 2016; Vandecandelaere et al., 2016).

Our first goal is to make the control and treatment groups look similar, thus comparable, over a series of control variables using weights based on propensity scores. After reweighting, under the assumption of limited omitted variable bias, the difference in a particular outcome (i.e., participation in the labor force) between the two groups is the average treatment effect (in our case, the effect of violence on the outcome being assessed). In other words, given that the average

⁷ For the empirical analysis, given that most of the outcomes are linked to household decision-making, we are using IPV prevalence instead of the broader VAW measure as the grouping variable to better capture the effects of violence. IPV is the most common and pervasive form of VAW in the LAC region (Heinemann & Vener, 2006).

treatment effect is of interest, we can weigh the control group observations (women who have not experienced violence) such that their (weighted) covariate distribution matches with that of the treatment group (women who have experienced violence).

Using CBPS, the average treatment effect can be obtained through these steps:

Step 1: A discrete choice model (probit) is run:

$$\text{Prob}(tvar = 1 | X) = \text{invprobit}(X * b)$$

where *tvar* is the treatment variable (having experienced violence or not), *X* is a matrix of control variables, and *b* is a vector of coefficients to be estimated. Unlike other propensity score methods, CBPS yields the probit coefficients (*b*) that produce the best balance on matching variables while modeling the treatment assignment.

Step 2: Weights are constructed as follows:

Weights for the treatment group: $1/p$

Weights for the control group: $1/(1-p)$

Where *p* is the predicted value (the propensity score) based on the model in step 1

Step 3: We regress the outcome variable, using the weights, on the treatment variable for evidence of impact.

$$Y = tvar * b$$

Y is the outcome variable, and *b* is the average treatment effect (the effect of violence on the particular outcome)

Data

For the empirical analysis, we draw from the most recent DHS for four countries in the CID region: Dominican Republic, Haiti, Guatemala, and Honduras. The DHS gather demographic and socioeconomic information for women and children and are representative at the national level. They collect information at both the household and individual levels. In the 1990s, the *Measure DHS* program added a specific module on domestic violence in a few countries' surveys to better understand the link between violence and health outcomes. The module is answered by women between the ages of 15 and 49. The DHS use the modified Conflict Tactics Scale (CTS) to measure intimate partner violence. The CTS is the most internationally accepted method of measurement of gender violence (Morrison et al., 2007). It is unique because it consists of questions on specific acts of violence ranging from less severe to severe, thus reducing the probability of self-censorship, an incident that often occurs when women are asked directly about previous experiences with violence.

We restrict our analysis to four countries for which recent DHS data are readily available. The sample sizes range from 4,322 in Haiti to 12,494 in Honduras. Our samples consist of women

who were selected for the domestic violence module. One of the DHS dataset's advantages is its use of a standardized questionnaire, facilitating a comprehensive analysis across countries.

Determinants of VAW

The propensity score reweighting method used in this chapter requires an evaluation over a series of covariates or control variables. These types of non-experimental impact assessments rely on the assumption that if we can control for the variables that matter the most, then any difference in outcomes between control and treatment groups, after reweighting, is a fair estimator of the average treatment effect; in our case, the effect of violence on the outcome being assessed. As such, we include a series of variables that are correlates of VAW in our propensity score reweighting model. A review of the literature informed the choice of these variables.

We control for the age of the woman (in years), considering the correlation between age and the risk of gender-based violence. Studies generally find that age is protective against violence; as a woman gets older, the risk of experiencing violence decreases (Kim et al., 2008; Rodriguez et al., 2001). We also control for marital status, the number of years since the woman's first union, and whether she was in a previous union. A woman's empowerment is also associated with her risk of experiencing violence (Sanawar et al., 2019). We, therefore, introduce a measure of empowerment calculated as the number of reasons for which the woman believes that a man can hit his partner. We also include a binary variable indicating where a woman was beaten by her father as a child and another one that indicates whether her current partner consumes alcohol. The correlation between alcohol use and violent behavior has been well-studied in the public health literature (Johnston et al., 1978; Zavala & Spohn, 2010). The woman's educational attainment (years of education) is also controlled for in the model. In the literature, the association between women's educational attainment and the odds of experiencing gender-based violence remains ambiguous (Vyas and Watts, 2009). Last, it is important to retain similarity in the household variables. Therefore, we include the following control variables: the household wealth index, locale (urban vs. rural), and its size (number of individuals living in the household).

The raw data reveal how dissimilar the two samples are in terms of characteristics and show the importance of covariate balancing in the context of a non-experimental impact assessment (Table A3). Probit regressions show no significant correlation between a woman's age and the odds of experiencing violence in most countries. When it comes to the association between violence and marital status, the result varies across countries. While in Haiti, married women are more likely to experience violence compared to other marital groups, in the Dominican Republic, Guatemala, and Honduras, this result is not so stern. There is a positive correlation between violence and the number of years since a woman's first union and having been in more than one union. There is also a significant positive association between past experiences with violence and a woman's partner's alcohol consumption. Using our measure of relative empowerment, we find that the less empowered a woman is, the higher her risk of experiencing violence. Years of education variable appears to be negatively correlated with violence, but only in Haiti and the Dominican Republic. The household's wealth appears to be correlated with experiences with

violence, particularly in the Dominican Republic, where women living in wealthier households tend to experience less violence. Finally, the household's size is uncorrelated with the risk of experiencing violence, but the household's location matters. Women in urban areas have a higher likelihood of experiencing violence than women living in rural areas, except in the Dominican Republic (Table A4).

Results

We begin this section by presenting a list of outcomes over which the impact of violence is assessed. Table A2 provides a detailed description of these outcome variables. First, we assess whether violence is associated with adverse reproductive health outcomes and different fertility preferences. These outcomes could directly result from violence (physical and sexual violence) or point to a woman's lack of control over her reproductive health. As such, we compare victims to non-victims in terms of the *number of children birthed*, the *number of children deceased*, the *incidence of an unsuccessful pregnancy*, and the *propensity to desire additional children soon* (in the next two years).

Gender-based violence can also have both direct and indirect consequences on the health of women. For instance, abused women might succumb to depression and anxiety, leading to the use of adverse substances as a coping mechanism (Esie et al., 2019). The first outcome variable that we consider is the *incidence of tobacco use*. Another health outcome is the incidence of *sexually transmitted diseases (STD)*; we want to know whether victims report a higher STD prevalence than non-victims. Violence might also take a direct physical toll on women by affecting their anthropomorphic measures (Rahman et al., 2013). Our study probes whether violence is associated with undernutrition among women as measured by the *probability of being underweight*.⁸

The last outcome is related to a woman's economic opportunities. We assess whether violence impacts the *propensity to participate in the labor force*. VAW could lead to a direct change in labor outcomes in two possible ways. First, the labor activities of victims of violence might be reduced due to absenteeism and higher employment cost. These could translate into fewer hours worked or even job termination. Second, violence might have a positive effect on labor force participation through the mediating factor of divorce. Women who experience violence at home might actively try to get away from home or be pushed to work to save enough money to exit the relationship (Agüero, 2013; Fajardo-Gonzalez, 2020). We used two outcome variables to assess the effect of VAW on the propensity to participate in the labor force. The first variable is defined as whether the respondent has worked in the last 12 months; this includes both unstable and unremunerated employment. The second outcome variable relies on a narrower definition and is restricted to the incidence of stable and remunerated employment in the 12 months that preceded the survey.

⁸ For this study, a woman is considered underweight if she has a body mass index inferior to 18.6.

The effect of violence is also assessed on a series of children's outcomes, comparing the children of victims and non-victims. Using a sample of children, age 6 to 17, we assess the impact of violence on *school attendance* (if a child has attended school during the current school year) and *school advancement* (if the child is at a higher level than the previous year). For children below the age of 5, we test if there is a significant difference in *weight at birth* (in kilograms) between the two groups of children. We also assess differences in the *probability of being anemic* (a hemoglobin level less than 10.9 g/dl) and *stunted*. Last, we test whether the children of victims are more likely to be *vaccinated* as recorded on a health card or as reported by the mothers (children from 0 to 36 months).

Women's outcomes

Table A5 shows the average treatment effect coefficients resulting from the non-experimental impact assessment using CBPS reweighting. The results are assessed by pooling all four countries for regional estimates, although a country-disaggregated analysis is also provided. In assessing the impact of violence on women's outcomes, we find a positive effect on the number of children birthed by a woman. Victims give birth to more children than those who are not victims, although this result is not significant for Haiti and Guatemala. Women victims are also more likely to have an unsuccessful pregnancy and a higher number of deceased children at the regional level. The results also support the hypothesis that women who are victims of violence have different fertility preferences, as expressed by a significantly lower preference for more children in the next two years in Haiti and Guatemala. In terms of the impact of violence on women's health, we find that abused women are more likely to use tobacco and are more likely to report a sexually transmitted disease. When it comes to the effect of violence on female labor force participation, similar to previous studies in the region (Agüero, 2013; Fajardo-Gonzalez, 2020; Morrison & Orlando, 2004), our results show a positive association between the experience of violence and women's propensity to participate in the labor force but only when the broader definition of labor force participation is used. When we restrict employment to just stable and remunerated work, we see no difference between victims and non-victims in most countries.

Children's outcomes

Next, we report the impact of violence on the welfare of children. Based on the pooled data, we find evidence of a negative impact on school advancement. The children of victims are less likely to advance in school; in other words, they are less likely to be in a grade higher than the previous year. The children of victims are also more likely to be anemic compared to the children of non-victims.

Conclusion and Policy Discussion

This paper provides an overview of violence against women in the CID region and an analysis of its impact on a series of outcomes related to women's welfare and the development of their children. The paper shows that VAW remains a widespread problem in the region as progress has been minimal. Population-based evidence report VAW (physical/sexual) prevalence rates

ranging from 13% to 53%; Panama has the lowest rate while Mexico and El Salvador have the highest. The data also show minimal progress in the reduction of prevalence rates over time. Intimate partner violence is a specific concern in the region and one of the most pervasive types of violence against women; the IPV prevalence rates in the CID region range from 18% to 24%. These rates are relatively low compared to other regions of the world. Femicide, the most extreme form of gender-based violence, remains a problem in the region. El Salvador, Honduras, and Guatemala have the highest rates of femicide in the region.

We use the most recent DHS for the Dominican Republic, Haiti, Guatemala, and Honduras to assess the impact of violence on a series of outcomes related to women's health, socioeconomic condition, and children's development. The DHS use a standard questionnaire and reprocess raw data into a standardized format using recode definitions, thus allowing a comparative assessment. In addressing the usual problem of confoundedness, we opt for a new propensity score reweighting method (CBPS) to balance with near perfection the sample of victims and non-victims over a set of covariates. Our findings show that violence is associated with several outcomes that are critical to women's health. We find that violence has adverse effects on women's reproductive outcomes, health, and fertility preference. These findings are consistent with previous research in developed settings showing that women who are victims of violence have poorer health outcomes (Campbell, 2002) and a higher risk of engaging in substance abuse (Heise et al., 1999). Studies conducted in developing countries have also shown lower health outcomes for victims (Agüero, 2013; Morrison and Orlando 2004). Focusing on the children sample, while we find no difference between victims and non-victims in school attendance, we find a negative effect on school advancement. This result is also consistent with past research in both developed and developing countries on the impact of exposure to violence on children's educational attainment and behavior (Emery, 2011; Arias, 2004).

Our study is not without limitations, mostly due to constraints on data availability and quality. Some of the raw data used in the descriptive and empirical analyses are outdated; this might reduce the viability of a cross-country comparative assessment. The DHS for Honduras, for example, dates to 2012. We acknowledge that such data may not reflect current conditions as general sentiments regarding VAW may have evolved since then. Further, we could not produce broader empirical results for the region as only four countries with comparable datasets were analyzed. Future research on the topic and in the LAC region should aim to produce a more comprehensive cross-country analysis once data availability improves. It would also be of interest to examine the impact of other forms of violence, such as emotional violence, on women's outcomes.

While it is true that some progress has been made towards eradicating VAW in the region, there are still daunting challenges as the issue remains pervasive. One of the main challenges today is the lack of full protection of women and girls' rights as human rights and the continuing gender gaps in many domains. As research has shown, communities with equal access to education, employment, health care, and housing have lower VAW prevalence rates. Also, women's greater command over resources can, in specific contexts, represent a deterrent to physical and emotional abuse by partners (Oduro et al., 2015). Another important challenge is the gap between the law

and its application, even within countries with progressive legislation. The issue of VAW persists across social strata, and many acts of violence remain unpunished or unreported. The fight against VAW in the region will require attention to be given to societal beliefs and norms and the structural power imbalance that renders women and girls vulnerable to violence in the first place. A third challenge is the lack of consistent and reliable VAW measurements that often complicate programs' implementation and monitoring. Surveys on violence against women are not periodic and are insufficiently used in the region, mainly due to their high cost. Some countries collect administrative data on a more regular basis, but these do not necessarily measure the incidence of VAW and therefore fail to address the extent of the problem. While we acknowledge that several countries in the region have included special modules on VAW in their national surveys, much more remains to be done to ensure that policymakers have the richest information for effective policy action.

Over the past three decades, bold advances have been made in enacting legislation and developing policy tools to address VAW. Most countries in the region have signed the Belém do Pará convention, which attests their commitment to ending VAW, and all countries have a national plan for reducing VAW. While these achievements are crucial, there still exists a significant gap from commitment to action. Government and policymakers in the region continue to face insurmountable challenges in implementing planned initiatives and often lack sufficient resources to successfully implement their policies. There is also a high rate of rotation of the authorities in charge of executing national plans, which has a negative effect on the continuity of programs and their overall sustainability in many countries (Essayag 2017). For its part, in many of its Country Strategies for countries in the CID region, the Inter-American Development Bank (IDB) Group has included specific actions to reduce VAW in both public and private spheres. For instance, in Honduras, the Bank's operations in the areas of social inclusion and citizen security have paid special attention to the issue of violence, deploying major efforts to reduce domestic violence and femicide. The IDB has also financed the construction and outfitting of two comprehensive care centers for women through the *Ciudad Mujer* program, building on the positive results from El Salvador. In Costa Rica and Mexico, the IDB has included in their Country Strategies more investment to improve women's safety in public spaces through an integrated transportation system. Other country strategies have focused on strengthening institutions' capacity to investigate and punish VAW, increasing institutional support for VAW survivors, and improving the quality of judicial systems.

In all, the eradication of VAW will require an integrated response from the entire public system. This coordinated approach should involve several sectors such as health, law enforcement, legislative, and the judiciary. One way of implementing such a response could be to create a multisectoral alliance group at the national level responsible for constructing and managing national policies designed to tackle the issue of VAW. Such a coordinated mechanism could help foster new efficient strategies to attain a common goal as it promotes the sharing of good practices. There is also a need to strengthen existing laws with protective measures for victims of violence and tougher sanctions for abusers. On the legislative front, it is also important to frame violence against women in a wider context, considering various expressions of VAW perpetuated in various spheres with an emphasis on the needs of socially disadvantaged women groups. For instance,

most countries in the region rely on first-generation laws that provide protection only against intimate partner violence.

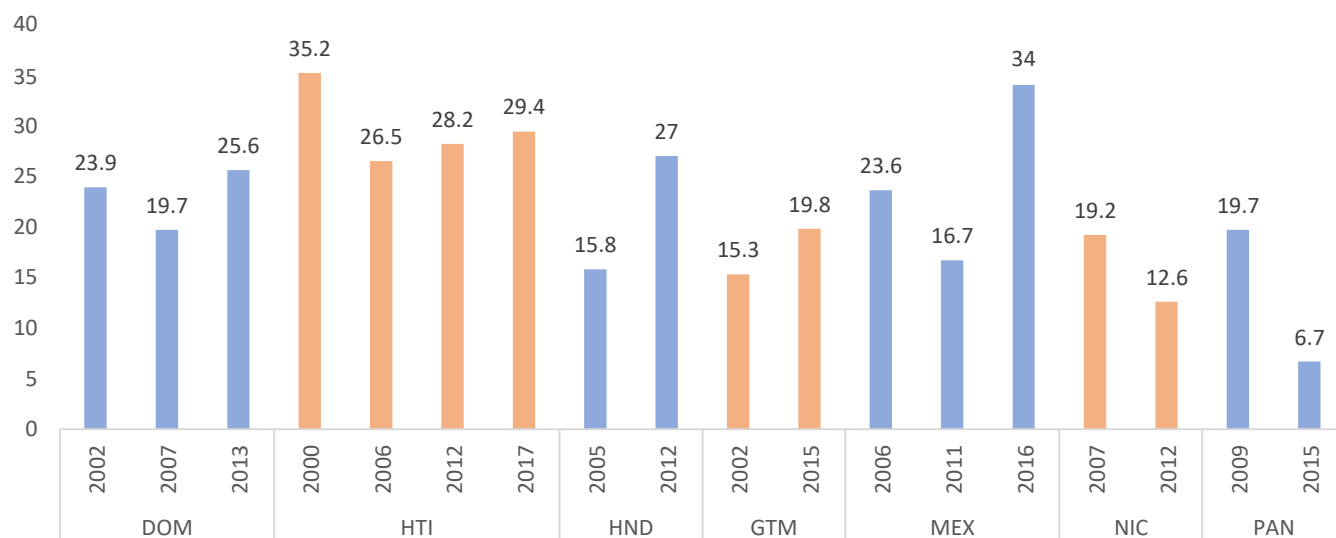
Furthermore, some barriers can be overcome with the appropriate leadership, empowered by the goal of achieving political gains. A more diverse and inclusive leadership will promote opportunities for greater participation of women in the design and implementation of policies. Also, countries should make the periodic monitoring and evaluation of programs a priority. The proper monitoring of laws and programs will allow policymakers to assess their contribution, improve access to services, and expand coverage. Finally, there is an important need to address the persistence of cultural patterns rooted in patriarchy that normalizes violence against women. One area of intervention is working with men and boys to educate them while strengthening prevention. There are already some promising efforts in that regard.

APPENDIX

Table A1. Sources of VAW and IPV Estimates in the CID region

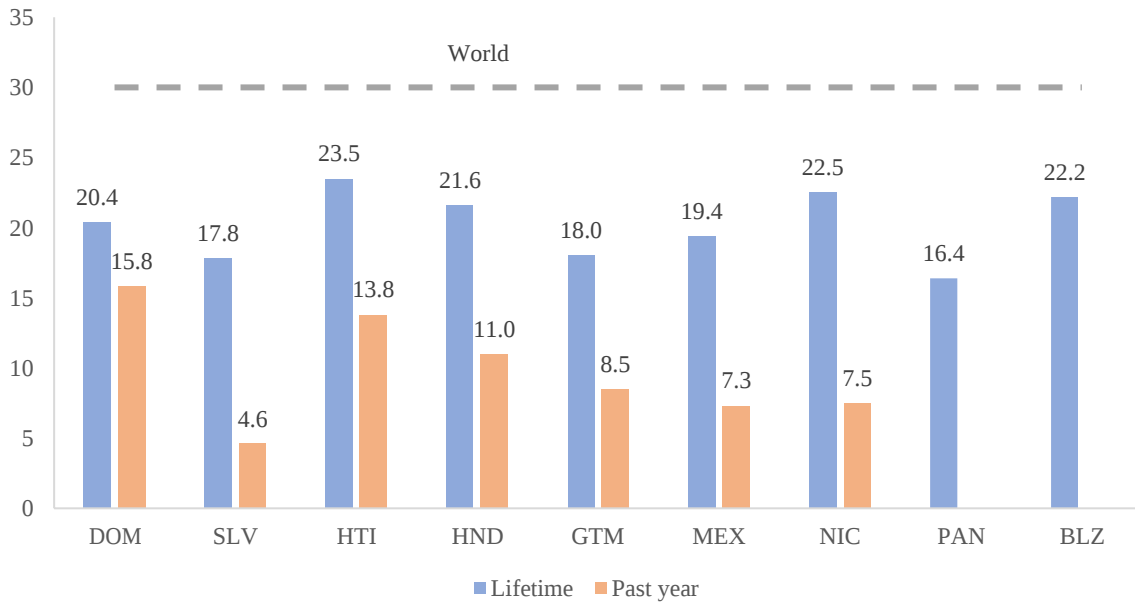
Country	Survey	Year
Belize	Belize Public Health Survey	2015
Dominican R.	Demographic Health Survey	2007 & 2013
Guatemala	Reproductive Health Survey and Demographic Health survey	2008 & 2015
Haiti	Demographic Health Survey	2006 & 2017
Honduras	Demographic Health Survey	2011
El Salvador	Encuesta Nacional de Violencia Contra las Mujeres	2014
Mexico	Encuesta Nacional sobre la Dinámica de las Relaciones en los Hogares	2016
Nicaragua	Reproductive Health Survey	2006 & 2012
Panama	Encuesta Nacional de Salud Sexual y Reproductiva	2009 & 2015
NB: Estimates are drawn from reports		

Figure A1 – Trends in VAW (Physical or Sexual - Lifetime)



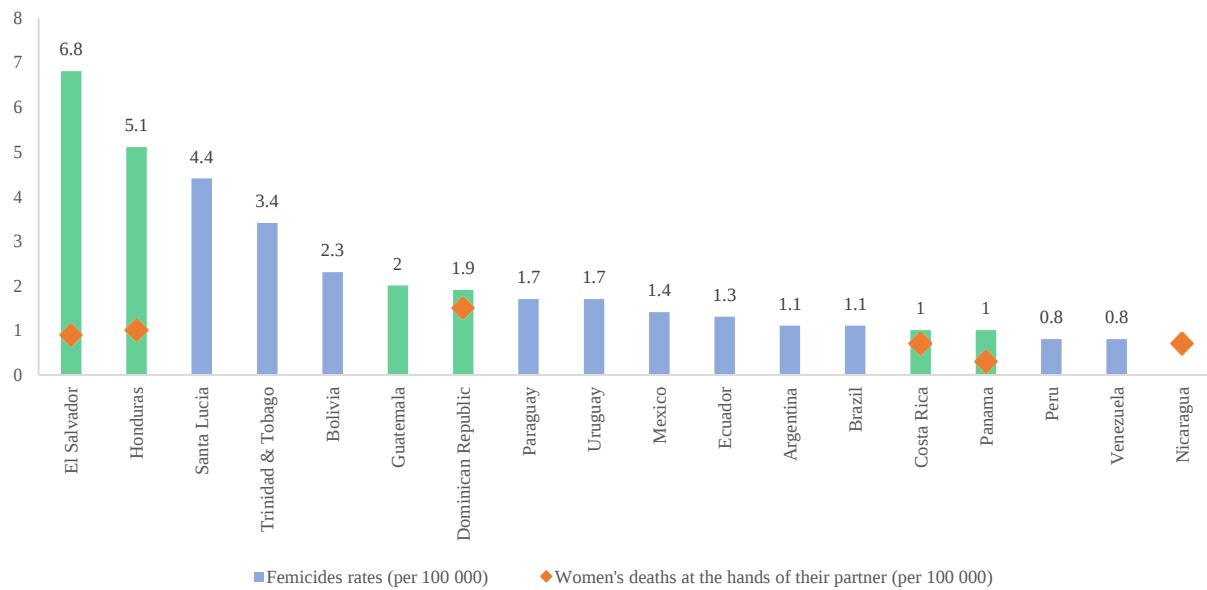
Source: See Table A1

Figure A2 – IPV Prevalence in CID Countries (Physical or Sexual)



Source: See Table A1

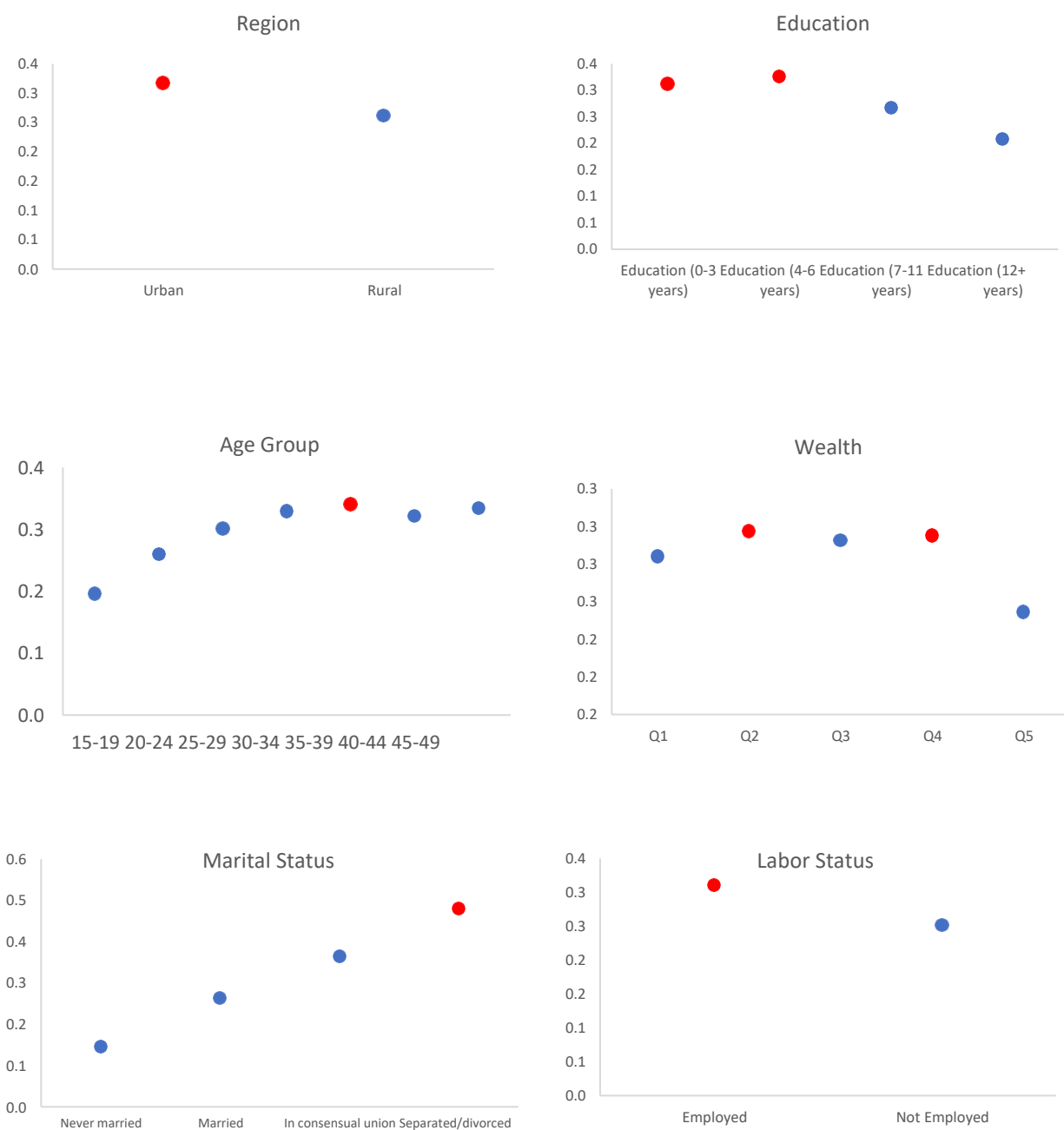
Figure A4 -Femicide Rates in LAC countries



Source: CEPALSTAT

CID countries are in green.

Figure A5 – Profile of Victims of VAW in CID Countries (Physical or Sexual Violence - Lifetime)



Source: See Table A1

Table A2 – Description of Outcomes

	Description
Women Outcomes	
Number of children born	Total number of children ever born.
Number of children dead	Total number of children who have died.
Pregnancy terminated	whether the respondent ever had a pregnancy that did not result in a live birth. This sample is restricted to women who have been pregnant at least once.
Desired kids (fertility preferences)	desire for more children in the next two years
Tobacco use	Whether or not the respondent smokes
Sexually Transmitted Disease	Any STD caught in the last 12 months.
Underweight	Body Mass Index is less than 18.6.
Labor force participation	Whether the respondent has worked in the last 12 months (stable remunerated employment)
Labor force participation (broad)	Whether the respondent has worked in the last 12 months (includes unstable and unremunerated employment)
Children Outcomes	
School attendance	Child attended school during the current school year. N= Children 6 to 17
School Advancement	Child at a current level that is higher than the previous year. N= Children 6 to 17
Birth weight	Weight at birth in Kilograms. N= Children 0 to 5 years old.
Child Anemia	Hemoglobin level less than 10.9 g/dl. N= Children 0 to 5 years old.
Stunted	Height for age standard deviation (according to WHO) is less than -300. N = Children 0 to 5 years old.
Vaccination	whether a vaccination date was recorded on a health card or the respondent reported that the child had received a vaccination. N= Children 0 to 3 years old.

Table A3 - Descriptive Statistics (Mean of Variables)

	HTI		DR		GTM	
	Victims	Non-Victims	Victims	Non-Victims	Victims	Non-Victims
Outcome Variables [Women Sample]						
Literacy	0.69	0.68	0.92	0.93	0.79	0.79
Number of children born	2.91	3.05	2.60	2.40	2.90	3.10
Number of children dead	0.28	0.30	0.12	0.12	0.16	0.16
Pregnancy terminated	0.19	0.21	0.42	0.31	0.23	0.16
Desired kids	0.10	0.12	0.17	0.22	0.16	0.13
Tobacco use	0.11	0.05	0.08	0.04	0.03	0.01
STD	0.13	0.11	0.04	0.02	0.05	0.01
Underweight	0.09	0.06	0.07	0.04	0.02	0.01
Labor force participation	0.42	0.47	0.53	0.48	0.30	0.32
Labor force participation (broad)	0.71	0.75	0.69	0.61	0.50	0.46
Outcome Variables [Children Sample]						
School attendance	0.92	0.94	0.96	0.97	0.87	0.85
School advancement	0.74	0.78	0.82	0.87	-	-
Birth weight (in Kg)	3153.17	3194.78	3180.28	3128.90	3012.04	3122.64
Child anemia	0.73	0.65	-	-	0.34	0.34
Stunted	0.10	0.07	0.03	0.02	0.17	0.17
Vaccination	0.72	0.75	0.92	0.93	0.96	0.96
Control Variables [Women Sample]						
Age	30.63	34.25	31.83	33.03	30.28	32.30
Married (yes/no)	0.78	0.71	0.10	0.20	0.42	0.53
In consensual union (yes/no)	0.14	0.14	0.52	0.54	0.45	0.34
Separated/Divorced/Widowed (yes/no)	0.09	0.14	0.38	0.27	0.13	0.13
Years since first union	10.31	12.41	13.66	13.95	11.90	13.25
More than one union (yes/no)	0.28	0.25	0.44	0.38	0.17	0.10
Father used to beat respondent (yes/no)	0.19	0.12	0.21	0.15	0.51	0.32
Measure of relative empowerment)	0.42	0.31	0.09	0.03	0.29	0.21
Years of education	5.72	6.02	9.23	9.84	4.97	5.22
Partner consumes alcohol (yes/no)	0.60	0.34	0.77	0.66	0.60	0.38
Wealth quintile 1 (yes/no)	0.17	0.18	0.26	0.17	0.22	0.19
Wealth quintile 2 (yes/no)	0.16	0.18	0.26	0.20	0.20	0.19
Wealth quintile 3 (yes/no)	0.20	0.19	0.21	0.21	0.23	0.19
Wealth quintile 4 (yes/no)	0.29	0.23	0.16	0.21	0.21	0.22
Wealth quintile 5 (yes/no)	0.17	0.21	0.10	0.20	0.15	0.20
Urban area (yes/no)	0.48	0.41	0.77	0.74	0.41	0.43
Household size	5.49	5.40	4.40	4.45	5.74	5.90
N	535	3787	864	4939	584	5928
Control Variables [Children Sample]						
Child age (in months)	80.43	91.55	85.91	86.34	89.54	93.06
Child gender (Male)	0.52	0.51	0.53	0.52	0.51	0.53
N	1011	7123	1281	6669	1264	12812

Table A3 (continued) - Descriptive Statistics (Mean of Variables)

	HON		POOLED	
	Victims	Non-Victims	Victims	Non-Victims
Outcome Variables [Women Sample]				
Literacy	0.90	0.92	0.83	0.84
Number of children born	2.85	2.76	2.87	2.83
Number of children dead	0.14	0.12	0.18	0.16
Pregnancy terminated	0.25	0.19	0.27	0.20
Desired kids	0.12	0.15	0.14	0.15
Tobacco use	0.03	0.02	0.05	0.02
STD	0.09	0.03	0.08	0.04
Underweight	0.02	0.02	0.04	0.03
Labor force participation	0.32	0.35	0.35	0.35
Labor force participation (broad)	0.61	0.56	0.60	0.55
Outcome Variables [Children Sample]				
School attendance	0.85	0.84	0.89	0.87
School advancement	0.63	0.67	0.70	0.72
Birth weight	3228.11	3225.06	3152.87	3171.49
Child anemia	0.34	0.30	0.42	0.37
Stunted	0.07	0.08	0.09	0.09
Vaccination	0.99	0.99	0.94	0.95
Control Variables [Women Sample]				
Age	30.22	32.15	30.44	32.19
Married (yes/no)	0.22	0.31	0.32	0.41
In consensual union (yes/no)	0.58	0.48	0.49	0.43
Separated/Divorced/Widowed (yes/no)	0.20	0.21	0.18	0.16
Years since first union	12.25	13.07	11.99	12.75
More than one union (yes/no)	0.31	0.23	0.32	0.23
Father used to beat respondent (yes/no)	0.43	0.26	0.34	0.22
Measure of relative empowerment)	0.40	0.25	0.37	0.23
Years of education	6.30	6.74	6.33	6.61
Partner consumes alcohol (yes/no)	0.54	0.36	0.62	0.41
Wealth quintile 1 (yes/no)	0.17	0.17	0.27	0.24
Wealth quintile 2 (yes/no)	0.23	0.19	0.23	0.22
Wealth quintile 3 (yes/no)	0.25	0.21	0.21	0.20
Wealth quintile 4 (yes/no)	0.20	0.22	0.17	0.19
Wealth quintile 5 (yes/no)	0.15	0.20	0.11	0.16
Urban area (yes/no)	0.54	0.51	0.49	0.44
Household size	5.46	5.39	4.85	4.92
N	1347	11147	3330	25801
Control Variables [Children Sample]				
Child age (in months)	87.86	93.89	86.07	91.78
Child gender (Male)	0.52	0.53	0.52	0.53
N	2672	21869	6228	48473

Table A4- Probit Regressions

	POOLED	HTI	DR	GTM	HON
Age	-0.01	-0.02	0.01	-0.01	-0.03**
Age squared	0.00	-0.00	-0.00*	0.00	0.00
Married (yes/no)					
In consensual union (yes/no)	0.03	-0.32***	0.14*	0.08	0.12***
Separated/Divorced/Widowed (yes/no)	0.01	-0.36***	0.43***	-0.12	-0.06
Years since first union	0.01***	0.00	0.02***	0.02**	0.01**
More than one union (yes/no)	0.19***	0.19***	0.08*	0.25***	0.24***
Father used to beat respondent (yes/no)	0.33***	0.34***	0.27***	0.37***	0.35***
Number of reasons for which a man can hit his partner (a measure of relative empowerment)	0.09***	0.07***	0.20***	0.09***	0.10***
Years of education	-0.01***	-0.03***	-0.01*	0	-0.01
Partner consumes alcohol (yes/no)	0.42***	0.56***	0.30***	0.45***	0.41***
Wealth quintile 1 (yes/no)					
Wealth quintile 2 (yes/no)	-0.01	-0.03	-0.13**	-0.01	0.07
Wealth quintile 3 (yes/no)	-0.03	0.12	-0.17***	-0.01	0.01
Wealth quintile 4 (yes/no)	-0.12***	0.14	-0.30***	-0.11	-0.1
Wealth quintile 5 (yes/no)	-0.19***	0.01	-0.44***	-0.13	-0.11
Urban area (yes/no)	0.15***	0.19***	0.13***	0.05	0.16***
Household size	0.00	0.00	-0.01	-0.01	0.00
Constant	-1.12***	-0.60	-1.26***	-1.36***	-1.09***
N	28,481	4,303	5,684	6,478	12,016
*** p<0.01, ** p<0.05, * p<0.1 NB: Country fixed effects are used for the pooled regression. Results are unweighted.					

Table A5 - Results: Impact of Violence (Average Treatment Effects)

	POOLED	HTI	DR	GTM	HON
Women Outcomes					
Number of children born	0.16***	0.17	0.21**	0.10	0.20**
Number of children dead	0.02*	-0.01	-0.00	0.00	0.03
Pregnancy terminated	0.06***	0.01	0.09***	0.06**	0.06***
Desired kids	-0.01	-0.03*	-0.02	0.02	-0.03**
Tobacco use	0.02***	0.07**	0.02*	0.01	0.00
STD	0.04***	0.01	0.02**	0.02**	0.06***
Underweight	0.00	0.01	0.02	0.00	-0.00
Labor force participation	0.00	0.01	0.06*	0.01	0.02
Labor force participation (broad)	0.05***	0.00	0.08***	0.06*	0.08***
Children Outcomes					
School attendance	0.00	-0.01	0.00	0.02	-0.00
School Advancement	-0.04***	-0.04	-0.02	-	-0.04**
Birth weight	-28.68	-109.21	64.35	-109.18***	8.10
Child Anemia	0.03**	0.05		0.00	0.04*
Vaccination	-0.00	-0.04	-0.04*	0.00	0.01*
Stunted	-0.01	0.01	0.00	-0.02	-0.01
*** p<0.01, ** p<0.05, * p<0.1 NB: Country fixed effects are used in covariate balancing for the pooled regression. Sampling weights are used in covariate balancing for women's outcomes. The <i>age-squared</i> variable is excluded in covariate balancing.					

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