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## VIOLENCE AS AN EPIDEMIC: EXAMINING ORGANIZED CRIME-RELATED HOMICIDES IN THE U.S.-MEXICO BORDER FROM A PUBLIC HEALTH PERSPECTIVE

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“Violence as an Epidemic: Examining Organized Crime-Related Homicides in the U.S.-Mexico Border from a Public Health Perspective”

## Abstract

Can collective violence along the U.S.-Mexico border—the Mexican states of Chihuahua, Coahuila, Nuevo León, and Tamaulipas, plus Texas—be considered an “epidemic”? This paper answers this question by applying a public health approach to organized crime-related homicides, an extreme and coordinated form of economic violence with deep social meaning, from 2005 to 2013. Researchers have increasingly described violence as a public health issue, and though “epidemic” has traditionally referred to communicable diseases, it has also expanded to include non-communicable conditions such as behavioral health issues. Thus, we propose that the issue of violence should be methodologically examined through a public health approach—describing, monitoring, and tracking violence and its patterns and trends by collecting all types of data; identifying risk factors that trigger violence; designing and evaluating prevention policies; and disseminating and executing prevention policies. In studying the issue through epidemiological tools such as homogeneity, incidence, predisposition, enabling and disabling factors, precipitating factors, and reinforcing factors, we conclude that the Mexican side of the border is experiencing a violence epidemic. This reality calls for a move to a more comprehensive preventive approach on this issue on both sides of the border. By redefining collective violence as health issue, researchers and policymakers will be able to promote integrative leadership, identify best practices from learn-as-we-go approaches, and create policy evaluations for each agency meant to intervene on this issue.

## Introduction

By 2020, more than one million people worldwide will die from violent acts. Although violence is a worldwide phenomenon, Latin America is one region most affected (United Nations Office on Drugs and Crime 2013). Honduras, Venezuela, Belize, Colombia, El Salvador, and Brazil rank high in the U.N. report on homicides. Mexico, too, is facing a severe violence episode, expressed in both the high numbers of people killed and a dramatic increase in the intensity and the variety of violent acts (González-Pérez et al. 2012, 3195; International Crisis Group 2013, 3).

Violence is defined by the World Health Organization (WHO) as the “intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation” (World Health Organization 2002, 5).<sup>1</sup> Social scientists have approached the problem of violence from sociological and criminological theories, focusing on the role of human beings and communities in creating and maintaining violence and how violent acts infringe upon social and legal norms.<sup>2</sup> However, violence has observable causes, patterns, trends, and effects that could be examined under other lenses. One of these is public health.<sup>3</sup>

Traditionally, public health efforts have focused on sanitation and the study and prevention of communicable diseases. In recent decades, they also have focused on

obesity, drug and alcohol abuse, depression, and anxiety (Williams and Donnelly 2014, 961). In the U.S., the Centers for Disease Control and Prevention (CDC) does recognize violence as a public health issue. It did so as early as 1983, establishing the Violence Epidemiology Branch, whose goal was to focus public health efforts on violence prevention (Dahlberg and Mercy 2009, 2). WHO also has defined violence as a “non-communicable condition” and a social disease. In other words, violence may not be produced by infectious pathogens and other “less multifaceted” roots of communicable illnesses, but it is the result of an intricate accumulation of preventable and modifiable risk factors (Williams and Donnelly 2014, 962).

By proclaiming violence as a “leading worldwide public health problem” (Dahlberg and Mercy 2009, 6; WHO 2002, 1) through Resolution WHA 49.25, the global community recognized that the *criminal approach*, a suppression/deterrence scheme based on the idea of “removing [or discouraging] violent offenders from society by tripling the average sentence for a violent crime” (Mercy et al. 1993, 11) has not been successful, and favored instead “community based initiatives” (WHO 2002, 2).<sup>4</sup> There is no wide-ranging consensus (Williams and Donnelly 2014, 961), but violence is increasingly defined as a public health issue (Dahlberg and Mercy 2009, 1; Macdonald 2002, 1; McDonald 2000, 1; Winett 1998, 499). By defining, addressing, and studying violence as predictable and preventable (McDonald 2000, 4), researchers would generate integrated knowledge useful to policymakers and would help organize action in areas such as education, labor, business, and criminal justice, among others (Mercy et al. 1993, 16).

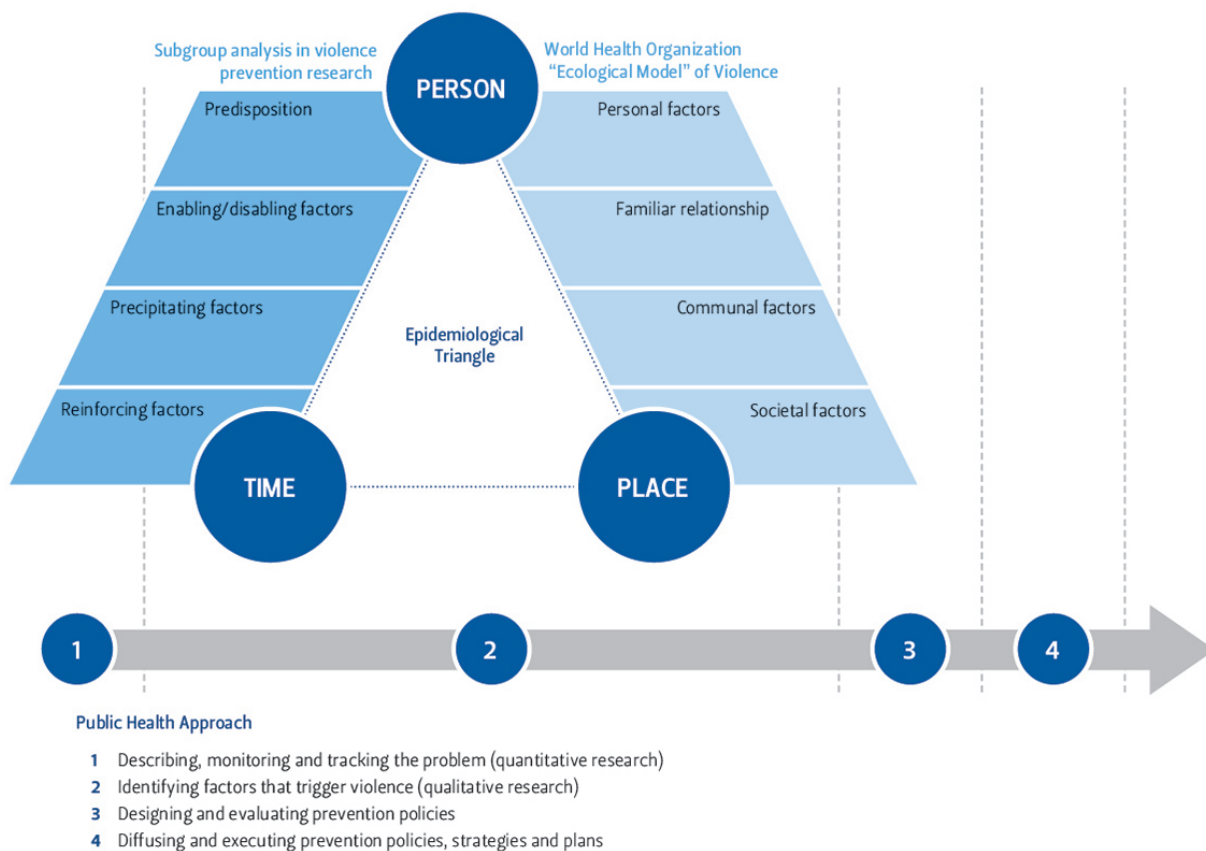
### The U.S.-Mexico Border and Violence

Can organized crime violence along the U.S.-Mexico border be considered an “epidemic”? Can epidemiological approaches to organized crime violence increase knowledge about the root of the problems and inform effective public policies to combat it? This paper seeks to answer these questions by applying a public health approach to the violence that has affected the U.S.-Mexico border from 2005 to 2013. Three concerns are important here.

First, even if the notion of epidemic was originally used to refer to communicable diseases, it has expanded to include non-communicable illnesses such as behavioral health issues (Williams and Donnelly 2014, 961). We think this approach is useful to examine border violence. Second, as Figure 1 shows, a public health approach implies identifying and analyzing the triangle person-time-place, with an examination of the method (weapon and mode) and the socio-environmental factors around violence patterns and trends through principles and methods developed to tackle public health issues. This methodological approach, or “host-agent-environment paradigm,” allows us to treat border violence as a “disease” (Williams and Donnelly 2014, 962). Third, this approach can inform policymaking, since it is based on the idea that prevention works (Krug et al. 2002, 1083). In that sense, this analysis has normative implications.

The public health approach offers four steps essential to examining violence: (1) describing, monitoring, and tracking violence and its patterns and trends by collecting all types of data; (2) identifying risk factors that trigger violence; (3) designing and evaluating prevention policies; and (4) disseminating and executing prevention policies (Haegerich and Massetti 2013, 195–196; McDaniel, Logan, and Schneiderman 2014, 4–5; Mercy et al. 1993, 14–15; WHO 2002, 4). Furthermore, this is not a question of single “patients” but a concern with preventing violence collectively and extending better care to whole populations (WHO 2002, 3). This study presents an account of the two first steps of the public health method (see Figure 1).

**Figure 1.** A public health approach for the study of organized crime violence



There are many forms of violence, and their human costs, in terms of grief and pain, cannot be measured. Here, the WHO has identified three types of violence: self-directed, interpersonal, and collective (WHO 2002, 3-6). This study is interested in organized crime violence on the Texas-Mexico border. In other words, we are primarily concerned with violence, defined as “the instrumental use of violence by people who identify themselves as members of a group—whether this group is transitory or has a more permanent identity—against another group or set of individuals, in order to achieve political, economic, or social objectives” (WHO 2002, 215). Organized gangs or largely economically motivated criminal groups fit the definition.<sup>5</sup> Thus, this study focuses on organized crime-related homicides

because they represent extreme and coordinated economic violence with deep social meaning (González-Pérez et al. 2012, 3196).

To implement our approach, we first examine available data, focusing on the homogeneity and incidence of violence in the five states under study (Texas, Chihuahua, Coahuila, Nuevo León, and Tamaulipas). The goal is to recognize which populations are at greater risk of participating in or falling victim to organized crime violence (Haegerich and Massetti 2013, 193). In 2013, the most recent year with far-reaching data, nearly 13 percent of Mexico's total population lived in the states of Chihuahua (3,631,410), Coahuila (2,885,662), Nuevo León (4,932,013), and Tamaulipas (3,456,127), according to the Instituto Nacional de Estadística y Geografía (INEGI). Texas' population was 26,448,123 in 2013. Thus, the data analyzed in this research is pertinent for 41,353,405 individuals, of which 15,092,098 (36 percent) resided in Mexico and 64 percent lived in the U.S. (INEGI, online). We expand the analysis to include variables highlighting (1) predisposition (e.g., psychology of youth and gender); (2) sociopolitical factors that enable/disable violence (corruption, impunity, lack of social trust, access to guns, and demand for drugs); (3) precipitating factors such as organized crime presence, gangs, and confrontational public policies; and (4) reinforcing factors such as violence cycles and cultural values. We conclude by assessing the usefulness of this method for further research, and we propose recommendations for policymaking. Table 1 summarizes our methodological framework.

**Table 1.** Collective violence from a public health perspective

Variables	Indicators	Definition
1. Homogeneity	1.1. Murder rate (100,000 inhabitants) 1.2. Murder rate (by place of residence) 1.3. Murder rate (by gender) 1.4. Murder rate (by age group)	It refers to the most affected part of the population. Available data allow comparing murder rates per age group, gender, and weapon type.
2. Incidence	2.1. Murder rate among men 2.2. Murder rate among the young 2.3. Murder rate among young men	It refers to the number of persons who develop a specific health-related state in a period of time. It is the total number of new cases divided by the number of persons at risk.
3. Predisposition	3.1. Collective violence and youth 3.2. Collective violence and masculinity	It refers to the tendency to get a condition. It is the result of the combined effects of genetic and environmental factors.
4. Enabling/ Disabling Factors	4.1. Corruption 4.2. Impunity 4.3. Lack of social trust	They refer to elements related to the context that may increase or decrease the likelihood of getting a state. Exercise and good diet are enabling factors while pollution is a disabling factor.
5. Precipitating Factors	5.1. TCO Presence 5.2. Confrontational Public Policies	They are the “source of exposure” that causes an event. And they signify that the government can make things worse by taking certain actions vis-à-vis organized crime.
6. Reinforcing Factors	6.1. Cycle of violence 6.2. Cultural values	They add to the probability of getting a condition. It includes frequent contact or severe environmental stresses.

## Understanding Border Violence with Epidemiological Tools

### *Homogeneity*

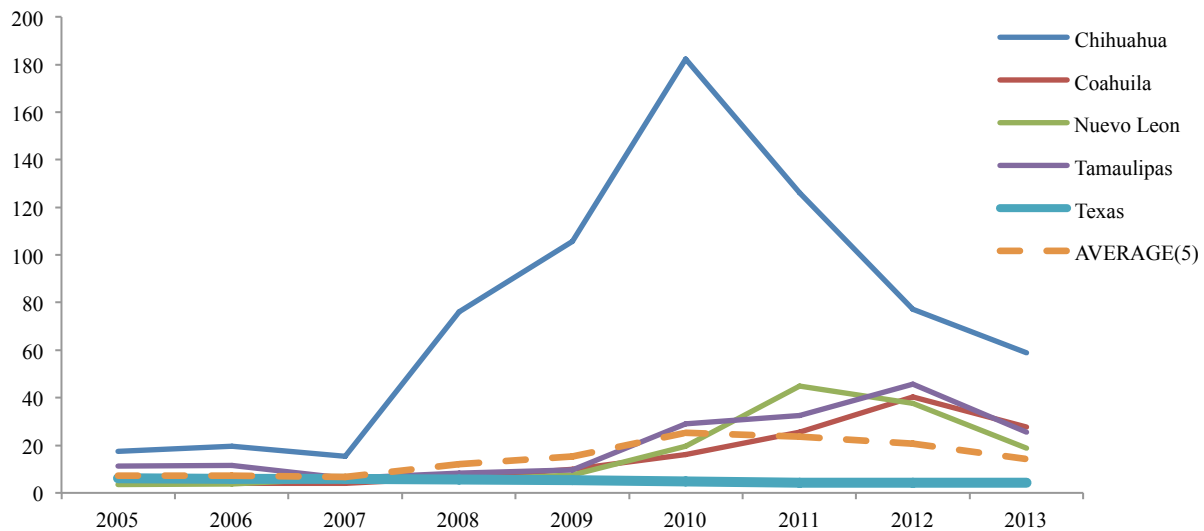
The epidemiological method calls for gathering large amounts of data from many cases (Valenti et al. 2007, 391). This helps determine homogeneity. Of course, no segment of the population is immune to violence (Winett 1998, 502), but patterns can be discovered from data. The most basic observation (Figure 2) is that there was a burst of murders in northern Mexico, beginning in 2008 in the state of Chihuahua (Aziz Nassif 2012, 242; Palma 2010, 380). That year, this state recorded a rate of 76 murders per 100,000 people, a 395 percent rise compared to 2007 (15.4/100,000). Two years later, this outbreak reached Tamaulipas and Nuevo León. In the former, the murder rate saw an increase of 202 percent, going from 9.6/100,000 in 2009 to 29/100,000 in 2010.

In Nuevo León the outbreak was more severe. Until 2009, slight increases alternated with marginal decreases. But in 2010, the rate grew by 167 percent (19.7/100 000) and by 128 percent in 2011 (44.9/100,000). By 2012, the worst seemed over. There was a decrease of 16 percent that year and a 50 percent drop in murders in 2013. Coahuila experienced a constant increase, around 60 percent per year, between 2008 and 2012. In 2013, this state also registered a decrease (INEGI, online). Texas contrasts with this picture, since its murder rate has dropped from 5.6 murders per 100,000 people in 2008, which was higher than the U.S. national rate of 5.4, to 4/100,000 in 2013, less than the U.S. national rate of 4.4 (FBI, online). The reasons that explain this drop in Texas murders go beyond the scope of this study, not only because criminal groups do not seem to be related to this decrease in general crime rates, which in fact follows the same pattern registered in industrialized countries, but also because there is little agreement on the explanations around it.<sup>6</sup>

Overall, Chihuahua drove increases in violence registered in the four Mexican states examined from 2007 to 2008. In 2010, Ciudad Juárez, Chihuahua's largest city, was considered the "most murderous municipality on the planet" as a result of a per capita murder rate superior to cities such as Bagdad, Caracas, and Kandahar (Aziz Nassif 2012, 233; International Crisis Group 2013, 34). From 2005 to 2013, the four Mexican states registered 40,763 murders, while the total for the border region (including Texas) is 52,299; 45.6 percent of these murders were committed in Chihuahua, 22.1 percent in Texas, 13.1 percent in Nuevo León, 11.4 percent in Tamaulipas, and 7.5 percent Coahuila.



**Figure 2.** Murder rate per 100,000 people in Chihuahua, Coahuila, Nuevo León, Texas and Tamaulipas (2005-2013)

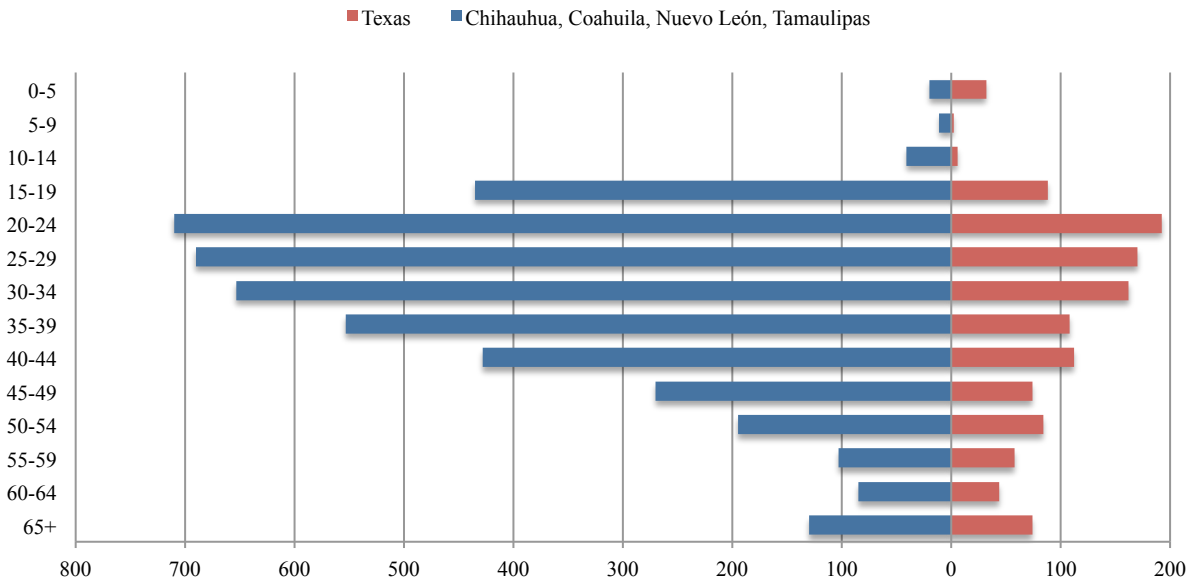


Source: *Estadísticas de mortalidad* (2005-2013), *Encuesta Nacional de Ocupación y Empleo* (ENOE), *Instituto Nacional de Estadística y Geografía* (INEGI), INDEX Crime Analysis, Texas Department of Public Safety (DPS), and Texas Department of State Health Services (DSHS).

Closer analysis shows that demographic subgroups are not affected to the same degree. Between 2005 and 2013, 77 percent of murder victims in Texas were male, while 23 percent were female. During that same period, 89.6 percent of victims were male and 9.7 percent were female in Chihuahua, Coahuila, Nuevo León, and Tamaulipas. There is no deep variance among Mexican states, with the lowest rate of male victims being in Nuevo León (86.9 percent) and the highest being in Chihuahua (91.3 percent).<sup>7</sup>

Similarly, 70.1 percent (28,555 cases) of the 40,763 murders registered in the four states studied here from 2005 to 2013 are victims between the ages of 15 and 39. Young adults between ages 25 and 29 are most affected, representing 23.7 percent of victims. Age data for Texas are similar. In 2013, 64 percent of victims were ages 15 to 39. Twenty- to 24-year-olds are worse off, accounting for 26.9 percent of all murder victims. Murder rates in Mexico for 2013 alone show exactly the same: 64 percent were between 15 and 39 years old. As in Texas, the 20- to 24-year-old sub-group is worse off, representing 23.3 percent of all murder victims. In short, there is no difference in terms of age between victims of murder in Texas and its Mexican neighbors (Figure 3). This is consistent with WHO’s claims that both victims and perpetrators of violence are almost always and everywhere adolescents and young adults (WHO 2002, 25).

Figure 3. Murder victims by age range, 2013



Source: *Estadísticas de mortalidad* (2013), INEGI, INDEX Crime Analysis, DPS. Data from Texas are approximate, as they are derived from graphs.

It is difficult to link all murders to the operations of criminal groups, even if records indicate that drug trafficking-related murders sextupled in Mexico in 2009 (Gutiérrez Cuéllar, Magdaleno del Río, and Yáñez Rivas 2010, 111) and that 44 percent of all 2010 murders in Mexico were organized crime killings (Ríos and Shirk 2011, 1).<sup>8</sup> Available information for Mexico covers only from January 2007 to September 2011 (Ríos and Shirk 2011, 9). The Texas case is clearer: databases do show murders under “circumstances involving narcotic drug laws.” Under this category from 2005 to 2013, there were 224 cases, or 1.94 percent of total murders.

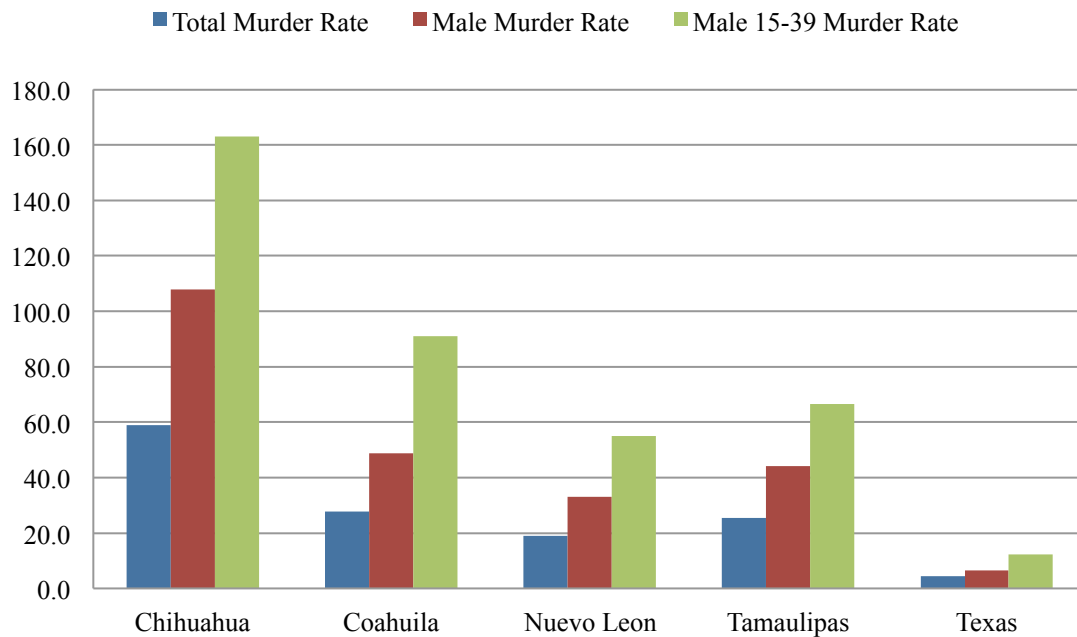
One way to approach this is to use the number of firearm killings as an indicator of organized crime killings. However, organized criminals did not commit all firearms murders, even if it is thinkable that most of the murders executed by organized criminals involved firearms. In fact, if we compare this data with our database, we determined that approximately 50 percent of murders in Mexico over the same period (2007 to 2010) are related to organized crime. But this rate is for Mexico as a whole. Looking specifically at Chihuahua, Coahuila, Nuevo León, and Tamaulipas data from the *Sistema Nacional de Seguridad Pública* (SNSP) for 2007 to 2010, 62 percent of murders (8,605 out of 13,876) were committed with firearms—a favored method of organized crime. Available data do not suggest more compelling arguments on this regard.

Socioeconomic data of populations affected by organized crime violence provides a good picture of the victims. Some evidence shows that “poor people bear a disproportionate share of the public health burden of violence in almost every society. Income inequality is already associated with national homicide rates” (Krug et al. 2002, 1086; Mercy et al. 1993, 9). Indeed, looking at the data “with a degree of consistency which is unusual in social classes, lower-class people, and people living in lower-class areas, have higher official crime rates than other groups (Fajnzylber, Lederman, and Loayza 2002, 2).<sup>9</sup> But more socioeconomic data for Texas and Mexican border states is required to go further. Making the case that poverty, inequality, unemployment, and a lack of opportunities lead to individual and communal anger (Winett 1998, 504), which turns into violence, remains a hypothesis, but it is widely accepted that socioeconomic conditions are both the cause and effect of violence (WHO 2002, 37). From a public health perspective, we need reliable data to further this argument.

### *Incidence*

Incidence measures “change from non-disease to disease in a population at risk over a specific period. By ‘population at risk’, we mean all persons in the population who have not been diagnosed with the disease of interest at the beginning of the observation period, but who are capable of developing the disease” (Ibrahim 1999, 1). Incidence indicates how many new cases of a condition have been suffered by a population and how this condition will change over time (Shields 2003, 50). In the case of murders, this implies tallying the number of new cases during our period and dividing it by the size of the population at risk. We take young men from 15 to 39 years of age.

In the male population, the 2013 murder rate in Chihuahua, Coahuila, Nuevo León, and Tamaulipas jumps from 31.9/100,000 (general population) to 56.9/100,000. Chihuahua leads the way; Nuevo León is last (Figure 4). When we consider only males between the ages of 15 and 29, the rate climbs to 91/100,000. Clearly, young males in the four Mexican states are more vulnerable to collective violence. At a smaller scale, young males are also the most affected population in Texas. The rate goes from 4.4/100,000 in the general population to 6.6/100,000 for males alone and to 12.3/100,000 for males between the ages of 15 and 39.

**Figure 4.** Murder victims by age range, 2013

Source: *Estadísticas de mortalidad* (2013), ENOE, INEGI, INDEX Crime Analysis, DPS, and DSHS. Data from Texas are approximate, since they are derived from graphs.

The next section examines risk elements such as predisposition, enabling and disabling factors, precipitating factors, and reinforcing factors.

## Epidemiological Factors and U.S.-Mexico Border Violence

### *Predisposition*

Predisposition is not a medical term. It points to a propensity based on genetic or environmental factors that aid in developing a condition. What are the characteristics of an individual that predispose him to committing a violent act or being a victim of one? Determining predisposition helps set targets for intervention measures.

The “ecological model” shown above and used by WHO to address the complexity of the causes of violence is key. It considers four factors. First are individual and personal factors that contribute to victims’ and perpetrators’ behavior.<sup>10</sup> The second focuses on close relationships. Having relatives or friends who engage in or incite violence, failed school, suffer from chronic unemployment, etc., can increase a person’s risk of being an offender or victim (Esbensen et al. 2010, 14). Third and fourth are community and social factors. Community refers to where people live, such as poor neighborhoods with drug cartels or street gang presence. Social factors include the responsiveness of the criminal system, gender role culture, social acceptability of violence, etc. All of these help explain why

collective violence spreads. (Haegerich and Massetti 2013, 195; Krug et al. 2002, 1085; McDaniel et al. 2014, 10; WHO 2002, 12–13).

We now consider age and gender to understand why a given population is more vulnerable to organized crime violence. In this regard, 30 percent of 12- to 15-year-old Mexicans are out of the school system (Aziz Nassif 2012, 244). This group is often referred to as *ni-nis*—youth that *neither* works *nor* studies. According to WHO (2002, 25, 29–30), 10- to 29-year-olds participate more often in street brawls and bullying. Thus, non-governmental organization leaders have called for areas for sports and the arts to reduce the probability that this population engages in violent activities in the streets or becomes recruited by gangs.

As for gender, since the 1920s psychologists have asserted that men engage in aggression more often than women. Aggressiveness appears to be a component of traditional masculine roles. Yet to view it exclusively this way could be misleading (Archer 2009, 2, 5). It could lead to false statements derived from narrow definitions of aggression (Björkqvist et al. 1994, 28). Besides, even if the social position of men is as breadwinners and women as homemakers, today's roles are more complex (Archer 2009, 4). Violence appears to depend more “on the type of encounter (male-male, male-female, female-female), type of aggression (physical, verbal, or indirect), and situation (in primary groups, i.e. home; in secondary groups, i.e., school or work; or between groups, e.i., warfare)” (Björkqvist et al. 1994, 28). Roles also depend on other variables such as income, age, and, especially in the U.S., race (Esbensen et al. 2010, 20). Men do engage in violent acts more often than women, not because of their “manhood” but because they are submerged in a sociocultural environment that generally encourages aggressiveness. Consequently, U.S. statistics show that 80 percent of those carrying weapons are male, and 97 percent of same-sex homicide perpetrators were men (Archer 2009, 7). In the even more chauvinist Mexican milieu, masculinity is linked to the use and exercise of a man's power (González-Pérez et al. 2012, 3203).

#### *Enabling and disabling factors*

Certain factors enable or disable collective violence. Corruption, impunity, lack of trust in public authorities, etc., constitute *enabling* factors. A government overwhelmed by violence and incapable of resolving individual cases will add to impunity and in turn incentivize criminal activity because the probability of punishment is low. In Ciudad Juárez, for example, government weakness is cited as an enabling factor that has destroyed the city (Aziz Nassif 2012, 232). On the contrary, policies that increase the rule of law reduce impunity and constitute violence disabling factors.

Scholars have also examined relations between drug traffickers and authorities during seven decades of *Partido Revolucionario Institucional* (PRI) power and during the *Partido Acción Nacional* (PAN) administrations (Aziz Nassif 2012, 239; International Crisis Group 2013, 3; Medellín Mendoza 2010, 119; Pereyra 2012, 433). Although it has been argued that connections between criminal groups and authorities have helped maintain low levels of collective violence in the past (Pereyra 2012, 433), recent analyses show that these links

have contributed to corruption and the lack of trust in public institutions by Mexican citizens, enabling violence (González Ortíz, García Tinoco, & Macedo García 2012, 86).

On the other side of the border, according to a February 2015 *Texas Politics Project at the University of Texas at Austin* poll, 78 percent of Texans had a favorable attitude toward the military, 57 percent toward the police, and 53 percent toward border control. Similarly, while the U.S. ranked 19<sup>th</sup> out of 177 countries in the 2015's *Transparency International Corruption Index*, Mexico ranked 106<sup>th</sup>. And while Coahuila and Tamaulipas appeared below the national average in terms of corruption perception, Chihuahua and Nuevo León were above it (Casar 2015, 20). Theoretically, this may help explain why collective violence reaches epidemic levels in the four Mexican states.

Impunity is also important. It is one of the most serious issues in Mexico because the enforcement of existing laws, such as arresting and indicting criminals, can act as a warning against violence. In fact, arrest rates for homicides have shown to have a major effect on the homicide rates (WHO 2002, 37).<sup>11</sup> In the words of Becker, “crime rates depend on the risks and penalties associated with apprehension and also on the difference between the potential gains for crime and the associated opportunity cost” (Fajnzylber et al. 2002, 1–2; Felbab-Brown 2012, 12). The inefficiency of the judiciary only results in impunity—at the national level, the impunity rate was 80.4 percent in 2010, with Chihuahua having the worst rate at 96.4 percent (International Crisis Group 2013, 25). Without credibility and efficiency, there is no crime reporting (Monárrez Fragoso and García de la Rosa 2008, 57). Mexico and the U.S. vary on this. In Mexico, a majority of citizens believe that impunity is one of the most important problems (LeClerq Ortega and Rodríguez Sánchez Lara 2015, 63). In the U.S., it is not an issue.

In a vicious cycle, impunity leads to violence and violence becomes an obstacle for the administration of justice (González-Pérez et al. 2012, 3204). In Ciudad Juárez in 2010, police were not trusted and three quarters of the citizens did not believe in the government's security strategy (Aziz Nassif 2012, 244–245). Executions, attacks against police agencies, public officials, and the military, and lynching episodes were indicators of institutional erosion, compounding the effect (Rodríguez Guillén 2012, 43). President Felipe Calderón tried to reverse this through judicial reforms (Salazar Pérez and Yenissey Rojas 2011, 7) and presented a bill to place municipal police forces under federal control, making it possible to enforce national standards (Aziz Nassif 2012, 256; International Crisis Group 2013, 22). He hoped to restore the police as the face of government and the entity that embodies the principle of the *legitimate* use of the force (González Ortíz et al. 2012, 107). Still, the existence of underlying enabling factors for collective violence suggests that this approach alone cannot succeed.

### *Precipitating factors*

Precipitating factors are important in explaining an epidemic. Thus, it is necessary to establish the triggering factors of a collective violence epidemic, such as that which occurred between 2008 and 2014. Drug trafficking organizations presence is one such trigger of violence.<sup>12</sup> Another factor can include militarized public policies, i.e., kingpin

strategies, which create power vacuums that destabilize cartels and incite conflicts among them (Huerta 2012, 2) and between them and the government.

Information about drug cartels is fragmented and non-conclusive. In 2013, some observers identified nine major Cartels—Tijuana, Juárez, Gulf, Sinaloa, Beltrán Leyva, Zetas, Jalisco New Generation, *La Familia Michoacana*, and Knights Templar, while others pointed out that splits and realignments had created 60 to 80 small groups (International Crisis Group 2013, 11). Higher numbers add to the likelihood of conflict. Additionally, criminal groups “are neither consolidated organizations nor monopolistic enterprises but more like a network of loosely linked and overlapping criminal groups that are not vertically integrated” (Olson 2012, 2). Indeed, higher rates of homicides correspond to geographical spaces where more groups are involved in disputes for control, including the states of Durango, Baja California, Sinaloa, Guerrero and Chihuahua (Pereyra 2012, 430; Selee, Arson, and Olson 2013, 4). Moreover, Sinaloa and the Gulf Cartel have greater control of the border and invest large amounts of resources in equipment, weapons, training, and personnel (Pereyra 2012, 439). In 2011, the fight between the Zetas and the Sinaloa Cartel increased violence in Nuevo León, Tamaulipas, and south Coahuila, as well as other states (de la O and Flores Ávila 2012, 17). In short, drug cartel presence and conflict seem to be important precipitating factors of violence.

Confrontational public policies can also help in understanding the spread of violence. Both countries have traditional justice systems, characterized by retribution, deterrence, and incarceration. Presidents Vicente Fox and Calderón directed their efforts to capture organized crime leaders (Chabat 2010, 3) and to strengthen state deterrence capacity (Medellín Mendoza 2010, 109–110). This *criminal approach* caused a reaction by drug cartels and increased human rights violations by government forces. Instead of developing social policies to contain the levels of violence, the armed forces took an offensive role, adding to violence and leading to them being accused of human rights violations (Salazar Pérez & Yenissey Rojas, 2011, 8).

The “kingpin strategy” of capturing or killing capos triggered violence as well (International Crisis Group 2013, 21; Pereyra 2012, 442). It caused intra-cartel divisions, resulting in new smaller groups unable to participate in the international drug market but able to use violence. Violence is in fact the main tool in the competition for control of territories. These new actors also resist rules imposed by major groups, fueling intergroup violence. Once established, these organizations eliminate street gangs and small criminals to defend their territory.<sup>13</sup> Clearly, violence erupts when any equilibrium is upset (Pereyra 2012, 442–443; de la O and Flores Ávila 2012, 19).

President Calderón’s “war against drugs,” which launched in late 2006, was a state strategy to regain the monopoly on the use of force. The federal police, which had 6,000 officers in December 2006, was six times larger (38,000 officers) by the end of his administration (International Crisis Group 2013, 16–17). And, while strengthening and professionalizing the police is essential, that is not sufficient to put an end to collective violence. Sometimes, the police add to the violence cycle. The Mérida Initiative, a U.S.-Mexico cooperation plan

worth USD \$1.4 billion over a three-year period (2008 to 2011), funded projects to support this “institutional capacity” but was also accompanied by higher levels of violence. Projects designed to strengthen the rule of law that focus on “repressive” capabilities—such as better equipment, data gathering systems, technical assistance for prisons, etc.—often result in more violence (Chabat 2010, 6; de la O and Flores Ávila 2012, 17; International Crisis Group 2013, 18–19; Santana 2010, 1; Selee et al. 2013, 1).<sup>14</sup>

This has brought some to refer to the Mérida Initiative as the obvious illustration of a “narcotized” bilateral cooperation agenda between the U.S. and Mexico (Benítez Manaut 2009). President Enrique Peña, who promised to focus on reducing violence, has not changed this criminal approach. He vowed to implement police and justice reforms, including revamping a defective judicial system and reforming the structure of public security (International Crisis Group 2013, ii), but the results have lacked so far. Even though the “Pact for Mexico,” a political accord signed by the main political parties—PRI, PAN, and *Partido de la Revolución Democrática* (PRD)—includes pledges to fund community programs, most measures are still directed to criminal control (International Crisis Group 2013, 38).

Precipitating factors have compounding effects. The presence of gangs, guns, and drugs in a community (WHO 2002, 34–35) interact with other precipitating factors. For example, “youths residing in socially disorganized communities characterized by high crime, high mobility, and high density share a community-level risk factor” (Esbensen et al. 2010, 15; McDaniel et al. 2014, 3, 10). In Mexico, the cartels are able to recruit tens of thousands of young killers in part because poor neighborhoods have been systematically abandoned over decades and lack schools, community centers, and security (International Crisis Group 2013, ii). Not only are young males in Chihuahua, Coahuila, Nuevo León, and Tamaulipas more susceptible to being victims of organized crime violence, but they also live in an environment with strong precipitating factors.

### *Reinforcing Factors: Cycles of Violence*

Reinforcing factors refer to environmental stresses that support violence cycles. Studies of *cycles of violence* show that violence can be transferred from one generation to another. In fact, “Young men and women exposed to violence (or witnessing or experiencing) during childhood and adolescence were at greater risk of perpetrating violence in the future” (Williams and Donnelly 2014, 963).<sup>15</sup> Of course, not all abused and neglected children become criminals (Widom and Maxfield 2001, 6). Some argue that research within the family domain has produced mixed results. Yet poor parenting skills do seem to facilitate gang affiliation (Esbensen et al., 2010, 14). Moreover, children exposed to abuse and neglect conditions have higher chances of future criminality (Widom and Maxfield 2001, 1; WHO 2002, 30).<sup>16</sup> Considering the conditions of many poor Mexican families living in organized crime territories, it is possible to detect childhood abuse and neglect, which may contribute to adopting criminal behavior later in life. More research on this is needed.

Since collective violence has social effects (Valenti et al. 2007, 393), the study of “culture” remains essential. Of course, culture has different meanings. In their study on violence in Ciudad Juárez, de la O and Flores Ávila (2012, 14) argue that drug trafficking is associated



with social inequalities and gender and class discrimination, which are all inserted into a *culture* of oppression and exclusion. Also, criminal groups develop their own identities, their own cultures. *La Familia Michoacana*, for example, follows Christian values that explain membership loyalty. Most of their executions are justified in “divine” terms (Pereyra 2012, 440). Culture is, in fact, a broad notion of inherited norms and values of society (WHO 2002, 38). Consequently, the idea of violence cycles, and its “intergenerational transmission” has been a central hypothesis in the study of abuse and neglect since the 1980s (Widom 1989, 160). Thus, violence generated by organized crime may have cultural traits. Violence, for example, is often endorsed as a normal way to resolve conflicts, and young men learn that their masculinity can lean on violent behaviors. There are also social norms, attitudes, and models that accept violence as inevitable (McDonald 2000, 2). Indeed, “cultures which fail to provide nonviolent alternatives to resolve conflicts appear to have higher rates of youth violence. [A] culture of violence is fostered at the community level through the growing acceptance of ‘easy money’ (much of it related to drug trafficking) and of whatever means are necessary to obtain it, as well as through corruption in the police, judiciary, military, and local administration” (WHO 2002, 38).

Conventionally, older generations influence younger generations’ attitudes, behavior, and knowledge (Mercy et al. 1993, 19). That includes violence. Witnessing violence as a child has been listed as a cause of violence since the mid-1980s (Winett 1998, 504). Individuals “learn through interactions with others (primarily family and peers), and a result of that interaction is the learning of definitions that are favorable or unfavorable to violating the law [...] the extent to which an individual accepts certain definitions is influenced by the nature of the relationships to the person or people providing the definition” (Esbensen et al. 2010, 19–20). Violence, too, can be learned from organized crime. Social Bond Theory suggests that, as social norms such as *attachment* (one’s empathy with others), *commitment* (personal investment in “conventional” behaviors), *involvement* in activities (that prevent to fall into delinquent behavior), and *belief* (acceptance of society’s norms and values) (Esbensen et al. 2010, 18–19) may prevent violence. Even more useful would be to suggest that these norms could also make reproducible collective violence in time, if we define organized crime organizations as a source for these informal institutions. There is evidence that in certain communities in Mexico, this is the case. Tamaulipas, in particular would fit this pattern, as well as some regions of Chihuahua and Coahuila.

## Conclusion

Organized crime violence has not attained acceptance as a public health issue partly because most experts view it as a criminal justice issue. Also, it does not always fit traditional public health approaches (Williams and Donnelly 2014, 961). Yet epidemiology is helpful in crafting new solutions to this old problem. This analysis of the Texas-Mexico border shows that certain factors identified in the field of epidemiology are useful tools to “diagnose” the problem of violence. Under a public health lens, the border, particularly the Mexican side, is experiencing a violence epidemic. This is not a metaphor. The effects are just as pernicious as those of any epidemic. Terms such as homogeneity, incidence, and predisposition, as well as enabling and disabling, and precipitating factors apply. There are also triggers of violence at the community level. These triggers include “endemic exposure of violence, cultural acceptance, poor social skills, poverty, and drug and/or alcohol misuse” (Macdonald 2002).

Clearly, it is critical to use several methodologies to move to a more comprehensive approach to organized crime violence, including epidemiological tools. These tools can help examine all actors and factors, including perpetrators, victims, environmental issues, processes of victimization, etc. Murder statistics “represent the tip of the iceberg and non-fatal violence is much more common” (Williams and Donnelly, 2014 960). Often, murders are the last link in a chain that includes deprivation, neglect, threats, intimidation, and physical and psychological acts (WHO 2002, 5–6; Valenti et al. 2007, 392). The means are also varied and the crimes can be committed by many different types of state and non-state actors.

Epidemiology also relies on field research. The problem must be described and monitored while identifying risk factors. Drug and alcohol abuse, for example, have long been associated with violent behavior, principally because substances lower inhibitions, impair judgment, and feed aggression (Winett 1998, 504). This knowledge calls for intervention, not punishment. Thus, epidemiological tools lead to action research because it can identify factors and elucidate mechanisms where prevention initiatives can work to change outcomes (Haegerich and Massetti 2013, 193). But extensive data must be gathered, patterns detected, etc., if transmission of violence is to be disrupted, thinking is to be changed, and norms are to be modified (Butts et al. 2015, 40).

No public health approach would be complete without considerations on how to disseminate results and design preventive actions (Haegerich and Massetti 2013, 193). A public health approach partly consists of designing and implementing public policies that make it possible to “protect, promote, and restore the people’s health [...] through collective and social actions [focused on] the prevention of disease and the health needs of the population as a whole” (Macdonald 2002, 2; Prevention Institute 2009, 5).

An epidemiological approach demonstrates that public officials should redefine violence as a health issue. Indeed, organized crime murders can be prevented “through the use of surveillance and other data collection systems, the identification of high risks groups, and the development and implementation of preventive strategies” (McDonald 2000, 2). This

approach calls for integrative leadership–partnerships across actors from diverse origins (Krug et al. 2002, 1083–1084) to look together for solutions, such as public health information campaigns, mobilizing civil society to prevent violence, identifying best practices, and creating policy evaluations for each agency meant to improve violence levels. This approach also allows for the adoption of learn-as-we-go approaches (Mercy et al. 1993). Thus, the creation of “a sense of ownership and responsibility...[and the] empowerment of communities is essential, because many of the most important solutions will have to be implemented locally” (Butts et al. 2015, 1087).

Primary intervention to prevent the multiplication of perpetrators (Krug et al. 2002, 1087; Mercy et al. 1993, 24; WHO 2002, 15) is critical to break violence cycles in the long term and to contain their geographical spread. In the current context of Mexico, privileging long-term answers to deal with the results of ongoing violence (Williams and Donnelly 2014, 964) becomes necessary to break with the reproduction of violence. An example is the Cure Violence (CV) model, formerly known as the “Chicago Ceasefire,” a violence reduction strategy directed at creating individual and communal changes where carrying guns is socially accepted (Butts et al. 2015, 40).<sup>17</sup>

Besides, state-building capacity cannot be left out. Cities with well-crafted and implemented programs to prevent violence have been successful in reducing the number of shootings and killings (Prevention Institute 2009, 4). Indeed, the “most effective and sustainable strategies for preventing violence are community–or population–based, addressing the complex interplay of social, behavioral, and environmental contributors to violence, poverty, homelessness, school failure, lack of activities, oppression, mental health problems, substance abuse, victimization history, etc.” (Prevention Institute 2009, 5). Violence prevention works better under conditions of good governance—that is, creating common ground among community leaders, organizations, and businesses (Mercy et al. 1993), as well as local, regional, and national governments (in our case, bi-national initiatives).

Although comparative data collection is expensive, if the goal is to improve living standards along the U.S.-Mexico border, it is essential to expand reporting and data collection systems to know why organized crime violence increases or decreases and which interventions work. The ideal would be to have policymakers determine strategies for each population as well as when and how preventive strategies can be efficiently adopted for different groups. Prevention programs are not necessarily “excessively expensive” when compared to other options such as incarceration (Krug et al. 2002, 1087). But they may be in the longer term. Thus, these steps are key to develop, evaluate, and assure widespread adoption of violence preventative measures (Haegerich and Massetti 2013). It can also help institutional capacity building in violence prevention, justify partnerships between public and private actors at the local, regional, and national levels, and define the kinds of leadership and organizations more susceptible to success (Haegerich and Massetti 2013).<sup>18</sup>

## Methodology Annex

To study organized crime violence in Mexico and the U.S., this study began by defining a time period of 2004 to 2014 (a couple of years before the widely documented outburst of violence in Mexico, and two years after the Peña administration took office). For the first part of our analysis (homogeneity and incidence), population and murder data per year for the states of Chihuahua, Coahuila, Nuevo León, Tamaulipas, and Texas were sought out. In addition, the same data for all of Mexico and the United States was acquired in order to have a comparative baseline. In the end, the time period was adjusted to 2005 to 2013 to have comparable data from the five states.

Some scholars point out that “there is no comparable and reliable data regarding the number of casualties related to drug trafficking, which include executions, ‘collateral’ victims, authorities, police officers, and soldiers killed, and others” (Gutiérrez Cuéllar, Magdaleno del Río, and Yáñez Rivas 2010, 112). For this reason, the comparison between figures of *defunciones por homicidio* in Mexico and *murders* in the U.S. were considered as equivalent. Both victims and victimizers were examined. The *Instituto Nacional de Estadísticas y Geografía*’s (INEGI) distinction between “*defunciones por homicidio*” (intentional homicide) and “*accidentes*” (non-intentional homicide) is important here since statistics in the U.S. define “murder” as intentional homicides (non-intentional murders would qualify as “manslaughter”). In short, U.S. “murders” would correspond to “*defunciones por homicidio*” in Mexico. The Disability-Adjusted Life Year data (DALY), widely used by U.S. researchers and policymakers as a universal metric to compare populations and health conditions in time, does not differentiate between intentional and unintentional homicides (Macdonald 2002, 1).

In terms of murders in Mexico, while INEGI counts “bodies” when reporting *defunciones por homicidio*, other sources like the *Secretaría de Gobernación*’s (SEGOB) *Sistema Nacional de Seguridad Pública* (SNSP) counts “ongoing investigations” of murders. Since an “open case” does not necessarily imply “murder,” and because most murders are not being investigated—this is especially true in Mexico, where impunity rates are very high—it is important to keep in mind these differences. In general, because of its reliability, this study used only INEGI data, although that was not always possible.

From INEGI, murder statistics, total and by gender, were used, but this information was only available up to 2013.<sup>19</sup> While the same murder numbers that the United Nations usually employs for its reports were used, different population numbers were considered because our study stretched over a larger period of time than the UN’s and we could not use exact census numbers for every year due to lack of availability. This choice has introduced a variation of about 15 percent between the murder rate numbers calculated in relation to those used by the UN. Moreover, population data from INEGI’s yearly national survey on employment (ENOE) was used, because they offer yearly estimates and come from the same source, INEGI, as homicide data. The ENOE survey releases population *projections* by trimester (hard data is updated only every five years). For our purposes, we used the population numbers from the second trimester of every year since the first

available data (2005). SEGOB also releases murder numbers through the SNSP and population numbers through the National Population Council (CONAPO). Data from both of these branches of SEGOB covers all relevant years (2004 to 2014), unlike INEGI. SEGOB, through SNSP, publishes one data set that was particularly important to us and which INEGI does not publish—murders by weapon type. Therefore, that weapons data was used.

In the U.S., Texas murder data including total number, gender, and weapon type used were accessed from the Texas Department of Public Safety's yearly index crime reports (DPS). This data was only available up to 2013. For data from the United States, data from the Uniform Crime Reports available from the FBI were used, though it was only available up to 2013. Total population data from the U.S. Census Bureau's American Community Survey (ACS), which was available from 2005 to 2013, were used.

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## Endnotes

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<sup>1</sup> Mercy et al.(1993, 8) proposes a similar definition.

<sup>2</sup> For a sociological approach, see Blume 1996.

<sup>3</sup> There is an increasing number of books beginning to approach the problem of violence from a public health perspective, including Bloom (2001) and Akers, Potter, and Hill (2013), among others.

<sup>4</sup> For an account of studies dedicated to the relationship between security policies and crime, see Pérez (2014, 121). The idea of suppression is based on the supposition that violent behavior can be eliminated by aggressive law enforcement. By adopting “deterrence strategies,” policymakers seek to prevent violence and to make the punishment of offenders an example for potential perpetrators (Butts et al. 2015, 40).

<sup>5</sup> For a discussion on the difference between these groups, see Dudley 2012.

<sup>6</sup> For a discussion on this, see Farrell, Tseloni, Mailley, and Tilley (2010).

<sup>7</sup> For an analysis exclusively directed at gender violence, see Kumar Acharya and Salas Stevanato (2005).

<sup>8</sup> The number may even be greater than 44 percent, depending on the definition of organized crime-related murder used.

<sup>9</sup> Moreover, poverty, unemployment and/or the lack of attractive jobs all have been identified by researchers as contributing factors of the presence of gangs (Esbensen, Peterson, Taylor, and Freng 2010, 14).

<sup>10</sup> For example, some studies link injuries and complications occurring during pregnancy and birth to neurological damage leading to violence and psychiatric illness. Also, and interestingly, “Low heart rates—studied mainly in boys—are associated with sensation-seeking and risk-taking, both characteristics that may predispose boys to aggression and violence [...]. High rates, however, especially in infants and young children, are linked to anxiety, fear, and inhibitions” (WHO 2002, 32).

<sup>11</sup> For a discussion on “impunity” and the ways to measure it, see LeClerq Ortega and Rodríguez Sánchez Lara 2015, 21-26.

<sup>12</sup> Some have pointed out the presence of “death squads” and training groups that prepare sicarios before getting hired by cartels (International Crisis Group 2013, 13–14). There are also “street gangs,” that is, any durable youth group whose interest in illegal action is part of its identity. Gangs are mainly a phenomenon for males ages 7 to 35. “They tend to come

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from economically deprived areas and from low-income [...] urban and suburban environments...Gangs are associated with violent behavior” (WHO 2002, 35).

<sup>13</sup> There is no agreement on this. Some scholars argue that cartels use street gangs to recruit new members. For a discussion, see Aziz Nassif (2012, 246).

<sup>14</sup> In bilateral terms, support includes new systems of intelligence sharing and “efforts to train and to equip police, prosecutors, and the courts have included hundreds of people-to-people exchanges among attorneys general, judges, lawyers, and police officers, and the provision of technical and scientific materiel, such as crime-scene investigation kits, necessary for improved operations of professional law enforcement agencies in Mexico” (Selee et al. 2013, 7).

<sup>15</sup> “Self-Control Theory” suggests that deficient parenting results in low levels of self-control, expressed by desires of immediate gratification (impulsivity), danger- and thrill-seeking, preference for ease over effort, penchant for the physical/material over the spiritual and for putting one’s needs and desires over those of others, and for anger and a low tolerance (Esbensen et al. 2010, 17).

<sup>16</sup> The notion of “neglect” refers to serious misjudgments by parents and severe deficiencies in childcare. It can include failure to provide adequate food, clothing, medical attention, etc. (Widom and Maxfield 2001, 2). Widom and Mafield’s two-year project identified a large sample of cases of child abuse and neglect from the 1960s to see if those people had engaged in criminal behavior in the 1980s (Widom 1989, 161).

<sup>17</sup> This strategy was not only applied in Chicago. It was known under the name of “Safe Streets Program” in Baltimore (Maryland), “Save our Streets” in Brooklyn, the “TRUCE Program” in Phoenix, and “One Vision, One Life” in Pittsburg (Butts et al. 2015, 42–47).

<sup>18</sup> If interventions are directed to break violence circles, they should target a variety of ages and groups to reduce violence in future generations. They should result in cooperative and sustainable attitudes—social cohesion—in the long term (Mercy et al. 1993).

<sup>19</sup> These are data that the United Nations used for their report on worldwide murder rates.