

The impact of child welfare legislation on domestic violence-related homicide rates

Kabir Dasgupta  | Gail Pacheco

New Zealand Work Research Institute,
Auckland University of Technology,
Auckland, New Zealand

Correspondence

Kabir Dasgupta, New Zealand Work
Research Institute, Auckland University of
Technology, 120 Mayoral Drive, Auckland
1010, New Zealand.
Email: kabir.dasgupta@aut.ac.nz

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Summary

State-specific statutes providing legal consequences for perpetrating domestic violence in the presence of a child have been enacted across the United States between 1996 and 2012. This paper examines the impact of this child welfare legislation, using a difference-in-differences approach. We find a significant drop in domestic violence-related homicide rates, when considering a wide range of victim-offender relationships. However, this result does not hold for marital homicides, suggesting that for this subpopulation, the risk of reprisal and consequent reduction in reporting may be counterbalancing the hypothesized deterrent impacts of the legislation.

KEYWORDS

child witness, difference-in-differences, domestic violence, homicide, youth

1 | INTRODUCTION

It is estimated that around 15.5 million children reside in families with intimate partner violence¹ every year in the United States (McDonald, Jouriles, Ramisetty-Mikler, Caetano, & Green, 2006). Further, 10–20% of American children are directly exposed to adult domestic violence annually (Edleson et al., 2007). Intimate partner violence is a subset of domestic violence, which is defined by the U.S. Bureau of Justice Statistics (Truman & Morgan, 2014) as including victimizations committed by intimate partners, immediate family members, and other family relatives.² Children who witness repeated domestic violence suffer from similar health-related problems as physically abused children (Kitzmann, Gaylord, Holt, & Kenny, 2003). In particular, they are likely to suffer from various emotional and behavioral problems (such as depression, low self-esteem, incidence of suicidal thoughts, aggression, and delinquency) and mental health-related disorders (such as poor development of cognitive abilities, mental stress, and anxiety; Tsavoussis, Stawicki, Stoicea, & Papadimos, 2014; Vu, Jouriles, McDonald, & Rosenfield, 2016). Given the numerous negative outcomes associated with children witnessing domestic violence, 25 states have introduced punitive legislation (since the mid to late 1990s) for perpetrating domestic violence in the presence of a child.³

The main objective of this study is to investigate the impact of these legislative changes. As such, we begin by using statute information from Child Welfare Information Gateway (2016)⁴ to review state legislations and provide a detailed

¹For cross country evidence on the prevalence of intimate partner homicides, see Stöckl et al. (2013).

²Immediate family members include (step) parents/(step) children/(step) siblings. The rate of domestic violence has fallen in the United States over the period 1993 to 2012—for example, it fell by 63% for persons aged 12 or older (Truman & Morgan, 2014).

³The upper age threshold for what constitutes a child ranges from 16 to 18, depending on the state.

⁴Child Welfare Information Gateway is a child welfare service of the Children's Bureau, U.S. Department of Health and Human Services. See <https://www.childwelfare.gov/>; retrieved on August 17, 2016.

summary on the year of implementation across all states. Uniform Crime Reports (UCR) data are then used to construct measures of domestic violence-related homicides (see Section 4). We initially employ the broad definition (based on the definition by the U.S. Bureau of Justice Statistics), before narrowing our focus to family homicide rates, including only immediate family members based on Iyengar's (2009) definition, and finally marital homicide rates. For the first two definitions, we also conduct separate analysis for the total population and children aged up to 18.

We utilize exogenous variations across state and time in implementation of child witness to domestic violence law and estimate difference-in-differences models. Our results show that the law leads to a statistically significant reduction in domestic violence-related homicides when we consider all possible victim-offender relationships, regardless of whether the focus is total population or children aged up to 18. These findings hold when we consider only family relationships but become insignificant when we narrow the outcome to just marital homicides.

2 | STATE LAWS THAT PROHIBIT CHILD WITNESS OF DOMESTIC VIOLENCE

Prior to the 1980s, law enforcement agencies employed conflict resolution tactics (such as offering advisory or counseling services) in response to instances of domestic violence (Buzawa & Buzawa, 1993; Zeoli, Norris, & Brenner, 2011a). In 1981–1982, a large-scale randomized experiment was conducted⁵ in Minneapolis known as the Minneapolis Domestic Violence Experiment (MDVE), where it was found that arresting the abuser was more effective in reducing future occurrences of domestic violence (Buzawa & Buzawa, 1993; Sherman & Berk, 1984). Motivated by evidence from this experiment, all 50 states have since enacted warrantless arrest laws for domestic violence. These are the main form of policy intervention in the domestic violence space that are punitive in nature,⁶ and as such we control for the impacts of these laws in the upcoming empirical analysis.

More recently, 25 states have taken the step to introduce punitive legislation for individuals that perpetrate domestic violence in the presence of children. The corresponding passage years are provided in Table 1. We classify the state laws into those defining specific circumstances under which child witnessing of domestic violence occurs and those providing punitive actions to be taken against offenders. As evident in Table 1, the passage years for defining the circumstances and providing punitive legislation differ in only three cases (Alaska, North Carolina, and Ohio). Further, the states of Connecticut and Vermont do not have provisions that define the circumstances of witnessing domestic violence but provide legal consequences for the act.

The legal consequences include incarceration (ranging from 1 month to 10 years), financial penalty (from \$1,000 to \$5,000), community service, and external supervision of parenting time with child. It is important to note that these consequences are in addition to the legal consequences of committing domestic violence (regardless of the presence of a child).

We construct our key independent variable (Law_{st}) based on passage years of legal consequences for committing domestic violence in the presence of a child. Law_{st} equals 1 in years when a state has punitive legislation for offenders and 0, otherwise. We also perform regressions using the passage year information for the state laws that define circumstances of witnessing domestic violence to see if our results are consistent with the main analysis.

3 | POTENTIAL MECHANISMS

This is the first empirical study to focus on the impact of domestic violence-related child welfare legislation. Existing research, which has focussed on the deterrent impacts of domestic-violence-related punitive legislation (adopted at the state level), have been performed with respect to warrantless arrest laws in general. These studies, while scant, have provided mixed evidence.

Empirical evidence from randomized experiments similar to the MDVE shows that arresting an abuser reduces future risk of domestic violence (Maxwell, Garner, & Fagan, 2001). On the other hand, Iyengar (2009) finds that mandatory warrantless arrest laws are positively related to intimate partner homicide rates. This result is potentially due to reduction in reporting by victims (due to emotional reasons and fear of future aggression) and risk of reprisal from offenders (Iyengar, 2009). Interestingly, in the same study, she finds that these arrest laws are also negatively related

⁵Full details of this experiment can be found in Sherman and Berk (1984) and Iyengar (2009).

⁶For a description of the different forms warrantless arrest legislation can take and empirical analysis of the impact of the enactment of this legislation, see Dasgupta and Pacheco (2016).

TABLE 1 State-specific legislation regarding child witness of domestic violence

State	Statute defining circumstances of witnessing domestic violence	Passage year	Statute providing legal consequences for committing domestic violence in the presence of a child	Passage year
Alaska	Alaska Stat. § 47.10.011	1998	Alaska stat. §§ 12.55.155	2000
Arizona	Rev. Stat. § 13-702(D)(18)	2000	Rev. Stat. § 13-702(D)(18)	2000
Arkansas	Ann. Code § 5-4-701	2001	Ann. Code § 5-4-702	2001
California	Penal Code § 1170.76	1997	Penal Code § 1170.76	1997
Connecticut	-	-	Gen. Stat. § 54-216	2012
Delaware	Ann. Code Tit. 11, § 1102	1998	Ann. Code Tit. 11, § 1102	1998
Florida	Ann. Stat. § 921.0024	1998	Ann. Stat. § 921.0024	1998
Georgia	Ann. Code § 16-5-70(d)	1996	Ann. Code § 16-5-70(e)(3)	1996
Hawaii	Rev. Stat. § 706-606.4	1999	Rev. Stat. § 706-606.4	1999
Idaho	Idaho Code § 18-918(4)	1998	Idaho Code § 18-918(4)	1998
Illinois	Comp. Stat. Ch. 720, §§ 5/12-0.1; 5/12-3.2	1999	Comp. Stat. Ch. 720 § 5/12-3.2	1999
Indiana	Ann. Stat. § 31-14-14-5	1999	Ann. Stat. § 31-14-14-5	1999
Louisiana	La. R.S. § 14:35.3	2003	La. R.S. § 14:35.3	2003
Mississippi	Ann. Code § 97-3-7(6)	2002	Ann. Code § 97-3-7(6)	2002
Montana	Ann. Code § 45-5-206	2001	Ann. Code § 45-5-206	2001
Nevada	Rev. Stat. § 200.485(7)	2001	Rev. Stat. § 200.485(7)	2001
North Carolina	Gen. Stat. § 14-33(d)	2003	Gen. Stat. § 14-33(d)	2004
Ohio	Rev. Code § 2929.01(LL)	1995	Rev. Code §§ 2929.12; 2929.17	1999
Oklahoma	Ann. Stat. Tit. 21, § 644(H)	2005	Ann. Stat. Tit. 21, § 644(G)	2005
Oregon	Rev. Stat. § 163.160	1998	Rev. Stat. § 163.160(3)(c)	1998
Puerto Rico	Ann. Laws Tit. 8, §§ 444; 632 (8 L.P.R.A. § 444)	2003	Ann. Laws Tit. 8, § 632	2003
South Carolina	Ann. Code §§ 16-25-20; 16-25-65	2006	Ann. Code §§ 16-25-20; 16-25-65	2006
Utah	Ann. Code § 76-5-109.1	1997	Ann. Code § 76-5-109.1	1997
Vermont	-	-	Ann. Stat. Tit. 13, § 1047 (13 V.S.A. § 1047 (2016))	2008
Washington	Rev. Code § 9.94A.535	1996	Rev. Code §§ 9.94A.535; 9.94A.537	1996

Notes. Information on state-specific statutes are collected from CWIG (2016). These are used to review annual state legislation in HeinOnline and Lexis Nexis databases with the purpose of identifying the years the relevant sections (that make domestic violence in physical presence of a child unlawful) were introduced.

to alternative measures of family and child homicides. She argues that unlike intimate partner violence, third-party reporting (such as teachers, neighbors, and other family members) can play a vital role in domestic violence that involves child victims. Fear of losing child's custodial rights may also prevent offenders from committing domestic violence.

On the basis of the previous evidence regarding warrantless arrest laws, we hypothesize two potential mechanisms at play when the domestic violence child welfare legislation was enacted. These are a deterrent impact due to the punitive law and a positive impact on domestic violence-related homicides if the law results in a reduction of reporting and reprisal as well. As such, finding a lack of impact may signal these two mechanisms are balancing each other out, while a negative effect likely indicates the deterrent mechanism dominates the effects hypothesized by reporting and reprisal theories.

4 | DATA

4.1 | Domestic violence-related homicides

We draw on UCR data (from the Federal Bureau of Investigation)⁷ to construct five state-level response variables with respect to domestic violence-related homicide rates (per 100,000 inhabitants). Table 2 provides descriptives of these measures, whereby their definition depends on information regarding the victim-offender relationship and the victim's age. Our two broadest measures (total and child homicides) include all relationships that come under the purview of

⁷We access FBI's UCR data from the National Archive of Criminal Justice Data (NACJD). Supplementary Homicide Reports data are available for the period 1976–2012. Data retrieved on December 20, 2016 from https://www.icpsr.umich.edu/icpsrweb/content/NACJD/guides/ucr.html#desc_al.

TABLE 2 Descriptive statistics (1993–2012)

Variables	Mean (standard deviation)	Minimum	Maximum	Data sources
Dependent (victimization counts/100,000 inhabitants)				
Total homicides	2.671 (1.879)	0	15.783	Uniform Crime
Child homicides	0.573 (0.499)	0	4.069	Reporting data (Supplementary Homicide Reports)
Total family homicides	1.183 (0.945)	0	10.522	
Child family homicides	0.411 (0.399)	0	3.463	
Marital homicides	0.849 (0.836)	0	8.159	
Explanatory				
Legal consequence for child witness to domestic violence	0.264 (0.440)	0	1	CWIG (2016), primary search of annual state legislation in HeinOnline and Lexis Nexis.
State legislation for child witness to domestic violence	0.267 (0.442)	0	1	
State demographic characteristics				
Proportion of Whites	0.823 (0.125)	0.257	0.985	U.S. Census Bureau
Proportion of Hispanic	0.086 (0.092)	0.005	0.473	
Proportion of male	0.492 (0.008)	0.472	0.527	
Proportion of adult	0.721 (0.022)	0.614	0.795	
Fertility rate	64.986 (7.388)	48.500	95.670	CDC WONDER
State economic and policy information				
Unemployment rate	5.605 (1.921)	2.300	13.783	Bureau of Labor Statistics
Per capita personal income (2005 dollars)	33201.750 (5641.355)	21078.880	62184.140	Bureau of Economic Analysis
Cigarette tax (2005 dollars)	0.717 (0.600)	0.025	3.776	Tax burden on tobacco
Beer tax (2005 dollars)	0.262 (0.227)	0.016	1.423	Beer Institute
High school dropout rate	0.097 (0.038)	0.014	0.245	CPS (ASEC)
Warrantless arrest law for domestic violence	0.896 (0.305)	0	1	Iyengar (2009), Zeoli et al. (2011a)
State crime-related characteristics				
Violent crime rates	436.412 (215.702)	66.900	1348.900	FBI UCR data
Arrest rate for violence against family and children	41.807 (37.702)	0	228.6749	
Sample size	974			

Notes. All dependent variables are in terms of counts per 100,000 people. The rates are estimated based on population estimates provided by UCR. The total homicide rate includes all homicides committed by family members (mother, stepmother, father, stepfather, daughter, stepdaughter, son, stepson, brother, sister, in-law, and other family) and intimate as well as ex-intimate partners (spouse and ex-spouse). Child is defined as aged up to 18. Based on Iyengar's (2009) analysis, family homicides include homicides committed by father, mother, daughter, son, stepfather, stepmother, stepdaughter, stepson, brother, and sister and child homicides includes homicides committed by fathers, mothers, stepfathers, or stepmothers against children aged up to 18. Marital homicides includes victims of marital violence (current husbands and wives). CPS (ASEC) = Current Population Survey (Annual Social and Economic Supplement); CDC WONDER = Centers for Disease Control Wide-Ranging Online Data for Epidemiologic Research.

domestic violence.⁸ The child rate only includes people aged up to 18. Next, using victim–offender relationships considered by Iyengar (2009), we construct narrower measures of family victimization rates⁹ (again for total and child). Finally, we create marital homicide rates that only include homicides committed by current spouse.

4.2 | State-specific characteristics

In our saturated regression analysis, we address potential empirical concerns leading to omitted variable bias by controlling for relevant state-level policies including warrantless arrest laws for domestic violence (Iyengar, 2009; Zeoli, Norris,

⁸In our two broadest measures, we include homicides involving family members (father, mother, daughter, son, stepfather, stepmother, stepdaughter, stepson, husband, wife, in-law, and other family member) and other intimate as well as ex-intimate partners (boyfriend, girlfriend, ex-husband, and ex-wife).

⁹In comparison with the broadest measures outlined in footnote 8, Iyengar's (2009) measures are narrower. More specifically, family homicide includes only homicides committed by father, mother, daughter, son, stepfather, stepmother, stepdaughter, stepson, brother, and sister, while child homicide includes homicides committed fathers, mothers, stepfathers, or stepmothers against children aged up to 18.

& Brenner, 2011b) and substance use regulations (cigarette and beer taxes).¹⁰ Further, for state-specific crime trends, we include state-year estimates of violent crime rates and arrest rates for violence against family and children (counts per 100,000 people; using respective UCR data population estimates; see Table 2).¹¹

For further precision of our regression estimates, we incorporate state-year economic and educational characteristics including unemployment rate, per capita personal income, and high school dropout rates (Tauchen, Witte, & Long, 1991; Walker & Sprague, 1999). Finally, state-specific demographics include annual state-level proportions of White, Hispanic, male, and adult population, as well as fertility rates.

5 | EMPIRICAL STRATEGY

We estimate difference-in-differences models by using variations across states and time in the implementation of child witness to domestic violence laws.¹² We estimate four regression models ranging from a baseline model (Model 1) to a more saturated model (Model 4). In our baseline model (Model 1), we regress domestic violence-related homicide rates on our law variable by controlling for state and year fixed effects. In Model 2, we add state demographic controls, and in Model 3, we add state economic, policy, and crime-related controls. Finally, in Model 4, we additionally control for pre-treatment trends and interaction between pretreatment trends and the law variable to control for Granger causality between domestic violence and implementation of the laws.

Our most saturated model (Model 4) is

$$DV_{st} = \beta_0 + \beta_1 Law_{st} + \beta'_2 P_{st} + \beta'_3 Z_{st} + \theta_1 \delta_{st} + \theta_2 (\delta_{st} * Law_{st}) + \gamma_s + \lambda_t + v_{st} \quad (1)$$

where DV_{st} is a state-level measure of domestic violence-related homicide rates. The variable Law_{st} is a binary indicator for whether state s has a child witness to domestic violence law at time t . P_{st} is a vector of states' demographic controls, and Z_{st} is a vector of state-level controls. γ_s and λ_t represent time-invariant state fixed effects and year fixed effects, respectively.¹³

In our most saturated model, we also account for the possibility that implementation of child witness domestic violence laws are likely to be states' response to varying trends in domestic violence-related homicides.¹⁴ In this regard, δ_{st} is a measure of time relative to the relevant passage year. It takes negative values during preimplementation years, positive values during postimplementation years, and 0 for the passage year (as well as states that have not implemented the law). Hence, θ_1 estimates the preimplementation trend. If it is significantly different from 0, policy endogeneity may be present.

We perform ordinary least squares regression for all models and further check whether our findings are consistent with Poisson regression models. In all specifications, standard errors are corrected for clustering at the state level.

6 | RESULTS

Table 3 provides the key estimates from Models 1–4, utilizing ordinary least squares regression. Results from the most saturated model (Model 4) indicate that implementation of child witness to domestic violence law (involving punitive measures) leads to a statistically significant drop in total victimization rate by 0.30 per 100,000 inhabitants (significant at the 5% level) and child victimization rate by 0.12 per 100,000 inhabitants (significant at the 10% level; columns 1 and 2). This equates to drops of 11% (total) and 20.4% (child), with respect to the means of these outcomes.

¹⁰Durrance, Golden, Perreira, and Cook (2011) find evidence that increased alcohol taxes reduce alcohol consumption and that such a drop can reduce female homicide.

¹¹Arrest and violent crime data can be respectively accessed from https://www.icpsr.umich.edu/icpsrweb/content/NACJD/guides/ucr.html#desc_il and <https://www.ucrdatatool.gov/>; retrieved on September 17, 2016.

¹²This is a standard empirical approach followed in policy analysis literature—see Autor (2003), Sabia, Swigert, and Young (2017), and Popovici, Maclean, Hijazi, and Radakrishnan (2017).

¹³Year fixed effects will also capture any changes in domestic violence related legislation at the federal level—such as the Violence Against Women Act in 1994.

¹⁴See Angrist and Pischke (2009) regarding the purpose of performing a parameterized event study.

TABLE 3 Regression estimates of the effects of child witness to domestic violence law on domestic violence-related homicide rates

(Victimization counts/100,000 inhabitants)	Total homicides		Child homicides		Total family homicides		Child family homicides		Marital homicides	
	1	2	3	4	5					
Legal consequences for domestic violence offence in presence of a child										
Model 1 – Baseline specification										
Law	-0.453** (0.172)	-0.105* (0.062)	-0.220** (0.084)	-0.103* (0.053)	-0.124* (0.076)					
Model 2 – Model 1 controls + state demographic controls										
Law	-0.421** (0.173)	-0.099* (0.058)	-0.208** (0.081)	-0.094** (0.045)	-0.103 (0.070)					
Model 3 – Model 2 controls + state economic, policy, and violent crime controls										
Law	-0.408** (0.174)	-0.124** (0.057)	-0.225*** (0.080)	-0.124*** (0.041)	-0.106 (0.070)					
Model 4 – Model 3 controls + pretreatment trends (event study)										
Law	-0.295** (0.120)	-0.117* (0.061)	-0.177** (0.075)	-0.081* (0.046)	0.004 (0.060)					
δ_{st}	-0.049*** (0.021)	0.010 (0.014)	0.000 (0.002)	-0.000 (0.000)	-0.045*** (0.014)					
$\delta_{st} \times$ Law for consequence	0.053 (0.033)	-0.017 (0.017)	-0.011 (0.017)	-0.010 (0.007)	0.048*** (0.018)					
Model 5 – Poisson regression with Model 4 controls										
Law	-0.317*** (0.113)	-0.102 (0.068)	-0.138* (0.071)	-0.056 (0.048)	-0.043 (0.066)					
Legal provisions for circumstances of witnessing domestic violence										
Model 6 – Model 3 controls + pretreatment trends (event study)										
Law	-0.188* (0.110)	-0.061 (0.061)	-0.213*** (0.080)	-0.107** (0.040)	0.022 (0.056)					
θ_{st}	-0.088** (0.034)	-0.008 (0.010)	0.000 (0.000)	-0.000 (0.000)	-0.052*** (0.017)					
$\theta_{st} \times$ Law	0.092** (0.037)	-0.000 (0.012)	-0.000 (0.000)	-0.000*** (0.000)	0.058*** (0.017)					
Sample size	974	974	974	974	974					

***This denotes significance at the 1% level.

**This denotes significance at the 5% level.

*This denotes significance at the 10% level.

Notes: The OLS regressions coefficients (marginal effects for Poisson regression) are reported above. Standard errors are corrected for clustering on the states and are provided in parentheses. Annual state demographic information include proportion of males, White, Hispanic, adult population, and fertility rate. Annual state economic, policy, violent crime controls include high school dropout rates, unemployment rates, per capita personal income, cigarette tax, beer tax, warrantless arrest laws for domestic violence, violent crime rates, and arrest rates for violence against family and children. All dependent variables are counts of victims per 100,000 inhabitants. In columns 3 and 4, we construct dependent variables considering victim-offender relationships considered by Iyengar (2009). The study period is 1993–2012.

When we look at narrower measures of domestic violence-related homicides using family relationships considered by Iyengar (2009; columns 3 and 4), we find that the impacts are larger for the aggregate population and similar in magnitude for children (relative to the broad measures in columns 1 and 2). In particular, when the coefficients are compared with their respective sample means, we find that the impacts are drops of 15% (total) and 19.7% (child).

Finally, for marital homicides (column 5), we do not find any significant relationship between state laws and homicide rates (except in the baseline specification). This suggests that the deterrent impact of the state laws that appeared to be dominant in other homicide measures are likely to be offset by risk of reprisal (reduction in reporting) in marital relationships.

When we consider statutes that define circumstances of witnessing domestic violence by children (Model 6), rather than focussing on the statutes that provide punitive legislation, our findings again generally point to this type of legislation producing a deterrent impact (for the majority of our homicide measures).

7 | CONCLUSION

Consistent with the early experiments related to domestic violence-related legislation, we find negative impacts on domestic violence-related homicide rates, when the focus is on legislation that specifically has a child welfare provision and associated penalties. This result is broadly consistent across both the total and child populations (including when the analysis is narrowed down to just family relationships) and are in support of the deterrent forces being the dominant mechanism at play. However, for marital homicides, our results suggests that the risk of reprisal (and thus potential reduction in associated reporting) may be counterbalancing the deterrent effects of the legislation and thus producing a result of statistical insignificance. Further research could consider additional heterogeneities in the laws, as well as investigate the underlying reasons behind the lack of impact of domestic violence legislation on marital homicides.

COMPLIANCE WITH ETHICAL STANDARDS

We hereby declare that this project was not funded by any public or private entity. We also declare that this study does not involve any conflict of interest.

ORCID

Kabir Dasgupta  <http://orcid.org/0000-0003-1580-9155>

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