ECONSTOR Make Your Publications Visible.

A Service of

ZBW

Leibniz-Informationszentrum Wirtschaft Leibniz Information Centre for Economics

Gorinas, Cédric

Working Paper A Detailed Analysis of Childhood Victimization Using National Registers: Forms and Sequencing of Violence and Domestic Abuse

IZA Discussion Papers, No. 11398

Provided in Cooperation with: IZA – Institute of Labor Economics

Suggested Citation: Gorinas, Cédric (2018) : A Detailed Analysis of Childhood Victimization Using National Registers: Forms and Sequencing of Violence and Domestic Abuse, IZA Discussion Papers, No. 11398, Institute of Labor Economics (IZA), Bonn

This Version is available at: https://hdl.handle.net/10419/180416

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



WWW.ECONSTOR.EU



Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 11398

A Detailed Analysis of Childhood Victimization Using National Registers: Forms and Sequencing of Violence and Domestic Abuse

Cédric Gorinas

MARCH 2018



Initiated by Deutsche Post Foundation

DISCUSSION PAPER SERIES

IZA DP No. 11398

A Detailed Analysis of Childhood Victimization Using National Registers: Forms and Sequencing of Violence and Domestic Abuse

Cédric Gorinas The Danish Centre for Social Research and IZA

MARCH 2018

Any opinions expressed in this paper are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The IZA Institute of Labor Economics is an independent economic research institute that conducts research in labor economics and offers evidence-based policy advice on labor market issues. Supported by the Deutsche Post Foundation, IZA runs the world's largest network of economists, whose research aims to provide answers to the global labor market challenges of our time. Our key objective is to build bridges between academic research, policymakers and society.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

IZA – Institute of Labor Economics								
Schaumburg-Lippe-Straße 5–9 53113 Bonn, Germany	Phone: +49-228-3894-0 Email: publications@iza.org	www.iza.org						

ABSTRACT

A Detailed Analysis of Childhood Victimization Using National Registers: Forms and Sequencing of Violence and Domestic Abuse^{*}

Using highly detailed longitudinal data from Danish registers, this study overcomes limitations inherent in victimization surveys and compares the role of individual and family characteristics for five forms of childhood violence, including sexual assaults and threats. The study also examines repeated and poly-victimization and the factors underlying abuse by different types of domestic perpetrators. This study finds that children aged 0 to 12 are the most exposed to sexual abuse, aggravated violence, and domestic abuse; that 30% of young victims of sex and threats will be victimized again; and that the economic and physical vulnerability of the mother in particular is a strong risk factor for early abuse. This study shows the importance of national registers in uncovering under-researched areas of childhood victimization and identifying the most vulnerable groups.

JEL Classification:	J12, J13
Keywords:	victimization, domestic crime, violence, child abuse

Corresponding author:

Cédric Gorinas The Danish Centre for Social Research Herluf Trolles gade 11 1052 Copenhagen Denmark

E-mail: gorinas@hotmail.co.uk

^{*} Special thanks go to seminar participants at UC Berkeley and the 2016 International Family Violence and Child Victimization Research Conference, and Stephanie Lyk-Vincent Jensen for helpful comments. Funding from the Danish Council for Independent Research (1329-00044B FSE) is gratefully acknowledged.

Introduction

In the United States and Europe, the rates of sexual and violent victimization among children and adolescents are twice as high as those among adults. According to victimization surveys, about half of children aged 0-17 have experienced a form of assault, and two percent were sexually abused in the preceding year (Finkelhor et al., 2010; Finkelhor, 2011; WHO, 2013). Estimates of the lifetime cost of child maltreatment reach up to \$210,000 (Fang et al., 2012)—a total of \$56 billion in 1993 (Miller et al., 1996).

Scholars have extensively studied the origins of crime and victimization, largely drawing from social disorganization theory (Shaw and McKay, 1942) and routine activity and lifestyle theories (Hindelang et al., 1978; Cohen et al., 1981). In essence, the social disorganization theory posits that instability in the social environment can lead to crime, while the routine activity and lifestyle theories propose a more individual-based approach, viewing victimization as resulting from the combination of a motivated offender, a suitable victim, and an ineffective guardianship. Quantitative researchers have corroborated both theoretical implications again and again: They show that living in a socially and economically disadvantaged community constitutes the main determinant of violence and that violent victimization, in particular, is more common among more vulnerable and delinquent people (for empirical reviews see, e.g., Patterson, 1991; Finkelhor, 2011; WHO, 2013).

However, all the many well-documented studies notwithstanding, certain areas of victimization remain unexplored because victimization surveys, on which most of these studies rely, have inherent limitations (Finkelhor, 2011; Aaltonen et al., 2012; see also Levine, 1976). For example, these surveys often focus on specific types of victimization (e.g., peer or dating violence, emotional abuse) and typically neglect domestic crime, sexual abuse, or the reoccurrence of victimization (Finkelhor, 2011). Moreover, surveys often cannot cover certain segments of the population, such as very young children (Finkelhor et al., 2010), immigrants and their descendants (Lauritsen, 2010), rural populations (Sharpe, 2014), or people with low socioeconomic status (Catalano, 2007; see also Addington, 2008).

Furthermore, victimization surveys rely on self-reported data on both the crime and the individuals' socioeconomic background (Aaltonen et al., 2012). Yet individuals' recollection of an *experienced* crime might not match the legal definition of a crime, complicating the generalization of the results (Melchert and Parker, 1997; Fergusson et al., 2000; Hardt and Rutter, 2004). Moreover, if we want to understand the sequencing of crime and the factors leading to repeated victimization (i.e., an individual's multiple experience of the same form of victimization) and poly-victimization (i.e., an individual's experience of different forms of victimization), the lack of longitudinal data in victimization research is problematic (Finkelhor et al., 2010). Thus more work is necessary for obtaining a fuller picture of certain forms of young people's victimization and the risk factors underlying victimization.

This study sheds light on the broad spectrum of victimization among young people by exploiting Danish registers and combining police records of victimization with a series of longitudinal registers for both individuals and their families. In this study, "childhood victimization" refers to five forms of violence suffered by those aged 0 to 20: sexual assaults (from indecent exposure to rape), simple violence (a few beatings with limited consequences), aggravated violence (more serious beatings with consequences), robbery, and threats (threats to people's lives and pressure on witnesses). First, I examine and compare the role of individual and parental characteristics for the five forms of childhood victimization. Second, I exploit the longitudinal nature of the registers to examine the patterns and the risk factors of repeated and poly-victimization. Third, I investigate the factors underlying domestic crime perpetrated by different family members.

Even though the underreporting of violent victimization is undeniable (Tjaden and Thoennes, 2000; Catalano, 2005),¹ data from national registers can overcome several limitations of surveys. Yet, while register data is used extensively in research on offending, its use remains very limited in the field of victimization. Exceptions include Nilsson and Estrada (2006, 2007), Estrada (2006), Aaltonen et al. (2012), Aaltonen (2016), who use Nordic registers to examine adult victimization, including violence and

¹ The U.S. Bureau of Justice (2016) estimates the reporting rates of aggravated assaults at 68% and of sexual assaults and simple violence at 35 and 38%, respectively. In Denmark, reporting rates range between 25% (forced intercourse for adults) to 50% (robbery) (Balvig et al., 2013, Boesen-Pedersen et al., 2014). The Danish victimization registers also contain cases of third-reported victimization, which are particularly relevant for young victims (Felson et al., 2002).

property crime, the socioeconomic outcomes, and the neighborhood characteristics of victims. In contrast, this study draws an exhaustive picture of childhood *violent victimization* and uses a richer set of variables to capture the victims' background, including parents' health and criminal history, and to identify perpetrators.

This study makes three contributions to the literature on the risk factors underlying childhood victimization. First, the analyses are the first to draw on official, detailed, and longitudinal data on young victims and their families' characteristics for an entire population. I have access to individual data on demographic, socioeconomic, health outcomes, and criminal history, as well as victimizations reported to the police between 2001 and 2012. The data allows me to compare risk factors underlying different forms, and the reoccurrence, of childhood victimization. Second, I link victims to their perpetrators via a common case-specific identifier across police registers. I use this link to examine not only domestic crime perpetrated by different family members but also the differences between cases that receive further police investigation and those that do not.

Third, and more generally, I show the importance of administrative data for future research in childhood victimization and, eventually, for crime prevention policy. Indeed, such data can help reveal gray areas in this under-researched but highly important subject. Moreover, the findings in this study can help policy makers reduce crime by targeting prevention and protection programs at the most vulnerable groups (Fajnzylber et al., 2000; Lauritsen, 2010; Lauritsen and Heimer, 2010), preventing its reoccurrence (Farrell et al., 2005; Grove et al., 2012), and improving the lives of a great many children.

Methodology

Data

This study uses data from Danish administrative registers, available for each official Danish resident in the country via a secured access provided by Statistics Denmark. I focus on individuals aged 0 to 20 (hereafter, "children and adolescents") to draw a complete picture of the forms of victimization experienced at different stages of early life. I include young adults up to 20 years old, so that the sample

covers individuals who can be held criminally responsible (in Denmark, older than 15) when examining the overlap between offending and victimization. I use registers on demographic and socioeconomic variables (age, gender, ethnicity, income, labor market status, education), registers on hospital records (hospitalizations, diagnoses), police registers on criminal convictions (crime, date of conviction), police registers on criminal charges (crime, date of the charge), and police registers on victimization (crime, data of victimization, self-reporting of the crime, location). Note that, for each year, I draw information for the entire population aged 0-20; thus constructing a sample that is not censored but simply limited by the period available (2001-2012).

For each year between 2001 and 2012, I retrieve a large number of variables for each individual by linking registers to one another via a common anonymous ID code. In addition to an ID code for each person, the registers on demographic and socioeconomic variables contain separate ID codes for the mother, the father, the household and, when available, the official partner of the mother or the father. These other codes allow me to include official measures of an individual's family background.

The police registers contain a case-specific ID code, which I use to link victims and perpetrators who face a criminal charge and to determine whether a case involves several victims or offenders. The analyses start with the entire Danish population younger than 20 in the years 2001 to 2012 (N=16,714,142) and then focus on the reported victims of violence (N=64,600).

Analysis of childhood victimization

I analyze patterns of childhood victimization and the factors underlying its different forms in three stages. To distinguish victims from non-victims among children and adolescents, I first use the population of Danish children and adolescents to compare the mean of variables from the registers between each group. Second, I investigate the reoccurrence of victimization through childhood and adolescence with a sequencing analysis, which allows me to examine the sequencing patterns of different forms of victimization over time. Third, to investigate the risk factors behind different forms of victimization, repeated and poly-victimization, and domestic abuse, I run ordinary least squares regressions with fixed effects.² The following two sections present the variables used in the regression analyses.

Dependent variables

The regression analyses in this study aim at identifying the significant risk factors underlying violent victimization among children and adolescents, where violence is defined in different ways. In each regression, the dependent variable is dichotomous and equal to 1 if the victimization is defined as type h, where h is denoted at the top of each column in each table and denotes either one of five forms of violence (sexual assaults, simple violence, aggravated violence, robbery, or threats), repeated victimization (i.e., several occurrences of the same category of victimization within year t or over the period), polyvictimization (i.e., several forms of victimization within year t or over the period) or domestic abuse perpetrated by one of four family members (i.e., a biological parent, a parent's new partner, a sibling, or another household member).

To investigate domestic abuse, I use the common case-specific ID code across police registers to link victims to charged perpetrators. I thus define a dummy variable equal to 1 if I can link a victimization case to a charged individual from the registers on charges, either in the same year or in a later year (65% of all childhood victimization in the period).³

I exclude victims of property crime (pickpocketing and theft) and categories with observations that are too few, too specific, or too difficult to interpret (breaches of restraining orders, threats against public authorities, and crime related to immigration laws).

² Probit estimations yield very similar results. Immigrants who did not immigrate to Denmark with their parents or whose parents did not already live in Denmark when they immigrated would be excluded from econometric specifications that control for parental variables. Similarly, as this project does not have access to income data after 2011, 2012 is excluded from the regressions.

³ I choose to link victims to charged, not convicted, perpetrators because Statistics Denmark has had a tradition for using charges as a way to measure "explained" crime (Statistics Denmark, 2015). Moreover, the court decision process takes significantly longer and using only convicted criminals would generate a larger attrition over time.

Independent variables

The independent variables represent risk factors and capture a series of variables on the individual's demographic, socioeconomic, health-related, criminal, and victimization characteristics.

Demographic variables include age (five groups), gender, and ethnic origin (western or non-Western origin). Socioeconomic variables capture an individual's family background: how many parents the individual lives with, large family, urbanization (i.e., whether a person lives in a municipality with more than 40,000 inhabitants), age difference with the parents, and each parent's marital status, level of education, employment situation, and income poverty (i.e., in the lowest 25th percentile of the income distribution). Health variables include information about both the individual (i.e., hospitalization in the previous 12 months, diagnosis for a mental or nervous illness in the previous 12 months) and each parent (i.e., convicted in the previous six years). I also capture the criminal behavior of each parent (i.e., convicted in the previous six years) and individuals older than 16 (i.e., convicted in the previous 12 months).

In the section on domestic crime, I use the ID code for the official partner to identify a parent's new partner (not a biological parent). In the regression analyses in this section, I also control for the following victimization characteristics: the form of violence, whether the crime occurs in a different municipality than that of the individual's residence, whether the victim or a third person reports the crime, whether the victim is hospitalized within two days following the assault, and whether several victims or several offenders are involved. (The results do not change when I control for victimization characteristics in the other regression analyses.)

Mean comparison and Sequencing Analysis

Mean comparison

This section compares the means of central variables between victims and non-victims (individuals who do not appear in the victimization registers in the period) younger than 20 (Table I).

Table I about here

As in previous studies, Table I shows that a person's socioeconomic background is the major risk factor for violent victimization (e.g., Shaw and McKay, 1942; Sampson and Groves, 1989; Glaeser and Sacerdote, 1999; Levitt, 1999; Finkelhor et al., 2005; Lauritsen and Laub, 2007). Indeed, 44 percent of young victims of violence live in single-parent households, compared to 25 percent for non-victims. Moreover, two thirds of victims have either one or both parents with a yearly income (including social benefits) below the 25th percentile—whereas only 50 percent of non-victims do. The educational level of the parents constitutes another significant difference between victims and non-victims: Nearly 40 percent of victims' mothers or fathers are not educated beyond compulsory schooling (9th grade), compared to only 25 percent of non-victims. Likewise, in line with survey-based studies (e.g., Straus, 1994; Thacher, 2004; Butler, 2013), the table shows that victims are twice as likely as non-victims to have young parents (34 and 18 percent, respectively).

In terms of demographics, Table I shows that those aged 12 to 20, particularly males, are overrepresented among victims of violence. This finding makes sense for two reasons. First, a risky behavior leads to exposure to crime, not only as a victim but also as an offender (Hindelang et al., 1978; Cohen et al., 1981; Fisher et al., 1998). Second, delinquency is stronger during young adulthood and among males (e.g., Greenberg, 1985). In contrast, children and adolescents younger than 12, rarely sampled in earlier victimization surveys, are less likely to be victims.⁴ Furthermore, ethnic minorities—particularly of non-Western origin—are more exposed to crime (for similar U.S. evidence, see Straus and Smith, 1990; Ross, 1996; Lauritsen and Laub, 2007).

In terms of delinquent behavior, victims are three times more likely than non-victims to be exconvicts (among adolescents older than 16) and children and adolescents with ex-convict parents are overrepresented among the victims. These findings are in line with those of studies showing that children inherit criminal behavior from their parents (e.g., Curtis, 1963; Widom and Wilson, 2015) and that victims tend to be prior offenders (Deadman and MacDonald, 2004; Allen, 2011; Entorf, 2015).

⁴ Among victims aged 0-6, 25% experienced their first victimization before age 3 and 50% before age 4.

For health, children and adolescents with earlier hospitalization or with earlier hospitalized parents are over-represented among victims. For example, 41 percent of victims have been hospitalized in the previous year, compared to 28 percent of non-victims; 2 percent have received a diagnosis for mental or nervous illness compared to 0.05 percent of non-victims; and 36 percent of victims' mothers have been admitted to the hospital in the previous six years, compared to 34 percent of non-victims' mothers. Earlier studies on child abuse show an association between childhood victimization and either parent's illness (Cicchetti and Rizley, 1981; Margolin and Larson, 1988) or the child's health (Tajima, 2000; Butler, 2013).

Finally, focusing on victims only, the bottom panel of Table I shows that the most common forms of violence reported in the registers are simple violence (47 percent), sexual assault (24 percent), and robbery (14 percent), followed by threats (9 percent) and aggravated violence (7 percent). Moreover, looking at repeated and poly-victimization, I show that in any year 4 percent of victims suffer several crimes—whether the same type or multiple types, while across all the years in the sample 9 percent and 10 percent of victims are repeated and poly-victims, respectively.

Overall, the findings in Table I are in line with those from victimization surveys: Young victims come from unstable environments in terms of socioeconomic background, criminality, and hospitalization history in the family.

Sequencing analysis

Most studies examining the factors leading to violent victimization focus on one single occurrence of violence, a particular form of crime or a limited range of crimes (e.g., Addington, 2008; Grove et al., 2012). However, other studies that have been able to follow children over time and cover multiple crimes show that many young victims become victims again of either the same crime (repeated victimization) or different ones (poly-victimization) (e.g., Finkelhor, 2011). Unfortunately, these studies also argue that poly-victimization and repeated victimization are more detrimental than a single victimization (Finkelhor).

et al., 2005). This section contributes to the sparse literature on repeated and poly-victimization by examining the sequencing of victimization among children and adolescents over 2001-2012.⁵

The analysis starts with a graphical representation in Figure I of the form of crime under the first victimization for five age groups (0-6, 6-12, 12-15, and 18-20), and only for individuals who appear several times in the victimization registers between 2001 and 2012 (N=14,513). Figure I shows that young victims of sex, aggravated violence, and—to a lesser extent—victims of simple violence and threats are more likely to be victimized again. Indeed, 56 percent of sex victims younger than 15, 16 percent of threat victims aged 15-20, and 13 percent of victims of aggravated assaults aged 0-6 become victimized again.

Figure I about here

Table II examines crime sequencing, i.e., which forms of victimization occur and when, for selected age groups.⁶ The first two columns present the age-and-victimization groups that are followed over time. The group that is most often victimized again is threat victims aged 12-20: 32 percent become victimized a second time, and 10 percent a third time. The subsequent victimizations typically take the form of simple violence or more threats. This finding is in line with that of Brewster (2000), who also shows that threat victimization often precedes violence.

Table II about here

Sex victims are also at high risk of being victimized again: 28 percent of the 15-20 age group and 22 percent of the 0-15 age group. Up to 14 percent are repeat victims of sex a second time, and 5 percent a third time. Finally, I find that although 12 percent of victims of simple violence become repeat victims once, few are repeat victims twice or more. In sum, this sequencing analysis shows that sex victims and threat victims are at particularly high risk of repeated victimization, or victimization as "a condition rather than an event" (Finkelhor, 2011: 22).

⁵ Clearly, I might miss children and adolescents who were already known to the police as victims before the victimization registers started in 2001. I argue, however, that this problem is likely to be minor, given that second victimizations typically happen in the same year (31%) or the following year (29%). Interestingly, I also find that the period between two successive victimizations shrinks with the ranking of victimizations: 44% of third victimizations and 56% of fourth victimizations happen within a year of the previous victimization.

⁶ Due to data protection rules for results with only few observations, I cannot follow the reoccurrence of victimization of young victims of aggravated violence.

Regression analyses

Forms of violence

The first set of regression analyses investigates the factors related to five forms of victimization, as well as repeated and poly-victimization (Table III), using a sample of all children and adolescents who appear in the victimization registers in any year (i.e., one observation per person per year), with N=52,363. I discuss the results for each group of variables—demographic, socioeconomic, criminal, and health—successively.

Table III about here

In terms of demographics, children aged 0-6 are more likely to experience sexual abuse and aggravated assaults than the reference group (adolescents aged 15-18). Given that very young children are the most vulnerable (e.g., Finkelhor, 2011), this finding makes sense. In terms of multiple victimizations, all age groups are generally as likely as the reference group to be repeat victims (col. 6), while victims aged 0-12 are significantly less likely to be poly-victims (col. 7). Children and adolescents of non-Western descent are significantly more exposed to simple and aggravated violence and threats (cols. 2, 3 and 5).

Unstable family structure relates to childhood victimization (see also, e.g., Bronfenbrenner, 1979; Belsky, 1980). In this study, I find that victims of threats and aggravated violence, as well as repeated and poly-victims, typically do not live with their parents. In contrast, sex victims are more likely to live with their parents. The remaining estimates of the socioeconomic variables in Table III are in line with the literature: Victims of violence commonly come from a disadvantaged background. Yet this finding does not hold for victims of robbery (col. 4), likely because robbery is both a violent and a property crime (e.g., Becker, 1968).

In terms of health, children and adolescents with mental or nervous illness diagnoses are significantly more likely to be poly-victims and victims of simple violence. Moreover, having a previously hospitalized mother in particular is a significant predictor of violence (cols. 2 and 3), threats (col. 5) and poly-victimization (col. 7). In addition, criminal history, whether individual or parental, is only significant and positive for aggravated violence (col. 3).

Even though the register-based variables cannot capture some of the more qualitative risk factors underlying victimization, such as parents' substance abuse or their level of interaction with the child, the findings thus far are largely in line with the literature. This similarity strongly suggests that the detailed level of information and the possibility of controlling for local and time effects in register data are satisfactory and reliable for future research on childhood victimization.

Domestic abuse

This section examines the factors underlying domestic abuse perpetrated by four family members. The identification of the assailants in the data comes from the link between victimization and criminal charge registers. However, the police charge some, but not all, perpetrators. Thus a potential selection bias, hereafter referred as police investigation bias, might emerge if the likelihood of someone being charged depends not only on the characteristics of the case (and the information available to the police) but also on the victim's characteristics. Therefore, before looking into the factors associated with domestic abuse, this section starts by examining the characteristics underlying police investigation,.

The assessment of police investigation bias draws from regression analyses of an indicator for whether the police charge someone on the victim's and the case's characteristics. Results are briefly discussed and shown in Appendix 2. In sum, the analysis shows very little police investigation bias. Indeed, the probability that a criminal charge follows victimization is generally case-dependent, and not victim-dependent. Nonetheless, all other things equal, the police are more likely to investigate the victimization of very young children and that of previously convicted adolescents (see Appendix 2). Reasons behind these findings might be that the reporter of crime involving very young victims often knows the identity of the assailant and that ex-convicts fear typically fewer reprisals from their perpetrator.

The first analysis in this section is in line with the sparse police investigation literature (Allen, 2011) and supports the reliability of register data for research on domestic abuse. The section continues with the investigation of the factors underlying domestic abuse perpetrated by four categories of assailant:

a biological parent, a parent's new partner, a sibling (or half-sibling), or another member of the household, in Table IV.

Table IV about here

The top row of Table IV shows the frequency of each type of domestic abuse (in percent). Biological parents are the most common perpetrators of domestic abuse (7 percent of the sample), while each of the other categories represents approximately 2 percent of the sample. Further calculations show that, while simple violence is the most common form of domestic abuse, sexual assault represents about half of the abuses perpetrated by a biological parent or a parent's partner (I do not find that victims are assaulted by both a parent and a parent's partner; see also Appendix 1).

In the regression analyses, I run two specifications for each perpetrator category: one with the same controls as in Table III and one in which I add controls for the form of crime and whether the individual is a repeat or a poly-victim. Table III shows that the risk factors underlying child abuse greatly differ by perpetrator. In terms of demographics, young females have a 1-to-3 percent higher risk of domestic abuse than males. Furthermore, cols. 1-2 show that victims aged 0-6 or 6-12 are 50 and 16 percent, respectively, more likely to be abused by a biological parent than victims aged 15-18. Children and adolescents aged 6-12 are at the highest risk of abuse by a parent's partner (up to 2 percent more, cols. 3-4), while those aged 0-12 are significantly more likely to be abused by another household member (up to 17 percent more, cols. 7-8).

Moreover, compared to ethnic Danes, non-Western children and adolescents are more likely to be abused by a parent or another household member (cols. 1-2 and 7-8), but less likely to be victims of a parent's new partner (cols. 3-4). This result makes sense given that divorce rates are lower among non-Western minorities (Statistics Denmark, 2016).

In terms of socioeconomic characteristics, children and adolescents who live with only one parent (the non-abusive mother for 60 percent of the sample) are more likely to be abused by a step-parent (cols. 2-3) or another household member (cols. 7-8)—who most likely is a co-habiting but unofficial partner. In addition, children and adolescents with relatively young parents are more likely to be victims of a parent's partner (cols. 3-4) and less likely to be victims of siblings (cols. 5-6). Furthermore, the

likelihood of abuse by a biological parent (the father in 82 percent of the cases) is higher for children and adolescents with fathers who are jobless, in the bottom income group, or ex-convicts (i.e., abusing fathers are for the most part unemployed or out of the labor force, relatively poor, and criminal). Interestingly, children and adolescents with a mother who is well off economically and physically, and thus able to provide for her children, are significantly less likely to be abused. This finding is in line with the importance of wives' economic independence for preventing marital abuse (e.g., Anderberg et al., 2015).

Surprisingly, I do not find that victims with previous hospitalizations or mental or nervous illness diagnoses are more likely to be abused. While this finding contrasts with, for example, Kaufman and Zigler (1989), it makes sense given that abusive parents are less attentive to their children's needs (e.g. Butler, 2013) and might fear being reported by hospital staff. Thus I find that abused children and adolescents generally do not go to the hospital directly following victimization, and neither do they report the abuse themselves. These findings exemplify the challenges of identifying domestic abuse victims who typically are dependent on their perpetrators and victimized in the absence of witnesses (Felson et al., 1999).

Another valuable finding is that abuse does not always take place in the child's home. In particular, abuse by a biological parent is more likely to happen outside of the victim's home locality, most likely because the abuser no longer lives with the child. In contrast, victimization by another household member or a parent's partner is more likely to happen in the home locality and is therefore more likely to occur in the child's home.

Finally, adding controls for the type of crime (cols. 2, 4, 6, and 8) does not change the results. Instead, it shows that victims of a biological parent are likely to become repeat victims (col. 2).

Overall, this analysis brings new evidence to the literature on the factors underlying domestic abuse. Indeed, I find that abuse by a parent's partner generally takes place near (or in) the victim's home, while abuse by a biological parent happens in another municipality. The analyses also confirm that the economic and health vulnerability of the mother are central to child abuse, particularly for mothers of non-Western origin.

Conclusion

The empirical literature on young victims of violence clearly shows that the most vulnerable are children and adolescents growing up in an unstable, relatively poor, and criminal environment. Previous studies, however, are often limited in scope—either in terms of victims' background variables or of the forms and intensity of crime—due to the inherent limitations of their data source: victimization surveys and interviews of young people and their families.

Preventing and reducing childhood victimization heavily depends on our knowledge of this subject, and thus on the quality and precision of the data available for investigating it. This study is the first to exploit longitudinal, detailed, and official data from national registers including police records of victimization, charges, and convictions, as well as population, hospital, and labor market registers. The two central questions guiding the analyses are whether register data represents a reliable source to study childhood victimization and, if it does, what new findings register data can bring in terms of both victims' background and victimization crime.

With respect to victims' age, for example, the study shows that victims aged 0-12 are more exposed to sexual abuse and aggravated violence, and to abuse by a biological parent or a parent's new partner, compared to older children and adolescents. Once their victimization is known to the police, victims aged 0-6 are also more likely to have their perpetrators charged with the crime. As to the form of victimization, the analyses reveal, among other things, that one third of sex victims and one third of threat victims will be victimized again, and that abuse by a parent's partner typically occurs near (or in) the victim's home, in contrast to abuse by a biological parent.

In terms of crime prevention and child protection policy, the findings of this study call for an increased focus on the following groups: very young victims, victims of sexual abuse, threat victims, children and adolescents with a criminal record, and those with a mental or nervous illness diagnosis. Moreover, the findings suggest that victimization prevention initiatives need to target specific groups of mothers; especially young, unemployed, low-income earner, non-western mothers and mothers with earlier hospitalizations.

As to the reliability of register data in studying childhood victimization, the findings confirm those from earlier studies based on victimization surveys: Violent victimization is more common among children and adolescents from disadvantaged backgrounds. While official police data alone might not suffice for showing crime trends (Baumer and Lauritsen, 2010), I argue that the register data of the type used in this study (i.e., with its high level of detail) is reliable and can significantly contribute to the victimization literature.

Future research should exploit register data to examine other unexplored areas of childhood victimization. For example, more research could use the possibility of linking charged offenders and victims to investigate interethnic crimes and marital violence. Moreover, thanks to the longitudinal nature of the data, scholars could evaluate the detailed consequences of childhood victimization suffered at different stages of life on various outcomes (see, e.g., McMillan, 2001, for a review). Increasing the use of data from statistical bureaus and police authorities can only further encourage victims and witnesses to report crime, thereby eventually reducing child victimization.

References

- Aaltonen, M. (2016). To Whom Do Prior Offenders Pose a Risk? Victim-Offender Similarity in Police-Reported Violent Crime, *Crime and Delinquency*, doi 10.1177/0011128716654713
- Aaltonen, M., Kivivuori, J., Martikainen, P., Sirén, R. (2012). Socioeconomic differences in violent victimization: Exploring the impact of data source and the inclusivity of the violence concept, *European Journal of Criminology*, 9(6): 567-583.
- Addington, L.A. (2008). Current Issues in Victimization Research and the NCVS's Ability to Study Them, paper prepared to the Bureau of Justice Statistics Data User's Workshop, Feb. 2008, Washington DC.
- Allen, W.D. (2007). The Reporting and Underreporting of Rape, *Southern Economic Journal*, 73(1):623-641.

Allen, W.D. (2011). Criminals and Victims, Stanford University Press, Redwood City CA.

- Anderberg, D., Reiner, H., Wadworth, J., Wilson, T. (2015). Unemployment and Domestic Violence: Theory and Evidence, forthcoming in *The Economic Journal*. doi: 10.1111/ecoj.12246
- Baumer, E.P., Lauritsen, J.L. (2010). Reporting crime to the Police, 1973-2005: a multivariate analysis of long-term trends in the national crime survey (NCS) and national crime victimization survey (NCVS), *Criminology*, 48(1): 131-176
- Balvig, F., Kyvsgaard, B., Boesen-Pedersen, J. (2013). Udsathed for vold og andre former for kriminalitet,
 Offerundersøgelserne 1995-96 og 2005-2012, The Danish Ministry of Justice, Det Kriminalpræventive Råd, Rigspolitiet
- Becker, G.S. (1968). Crime and punishment: An economic approach. *Journal of Political Economy*, 76(2), 169-217.
- Belsky, J. (1980). Child maltreatment: An ecological integration. *American Psychologist*, 35(4): 320–335.
- Boesen-Pedersen, J., Balvig, F., Kyvsgaard, B. (2014). Udsathed for vold og andre former for kriminalitet, Offerundersøgelserne 2005-2013 med særligt afsnit om køn og vold, *The Danish Ministry of Justice, Det Kriminalpræventive Råd, Rigspolitiet*
- Brewster, M.P.(2000). Stalking by Former Intimates: Verbal Threats and Other Predictors of Physical Violence, *Violence and Victims*, 15(1): 41-54
- Bronfenbrenner, U. (1979). *The ecology of human development*, Harvard University Press, Cambridge, MA
- Butler, A.C. (2013). Child Sexual Assault: Risk Factors for Girls, *Child Abuse & Neglect*, 37 (9): 643-652.
- Catalano, S.M. (2005). Criminal Victimization, 2004. U.S. Department of Justice, Bureau of Justice Statistics, Washington DC.

- Cicchetti, D., Rizley, R. (1981). Developmental perspectives on the etiology, intergenerational transmission and sequelae of child maltreatment. *New Directions for Child Development*, 11: 31–56.
- Cohen, M., Kluegel, J., Land, K. (1981). Social Inequality and Predictory Criminal Victimization: An Exposition and Test of a Formal Theory. *American Sociology Review*, 46:505-524.
- Curtis, G.C. (1963). Violence breeds violence-perhaps? American Journal of Psychiatry, 120: 386-387
- Deadman, D., MacDonald, Z. (2004). Offenders as victims of crime? An investigation into the relationship between criminal behaviour and victimization. *Journal of the Royal Statistical Society*, Series A, 167(1), 53-67.
- Entorf, H. (2015). Economic factors of victimization: evidence from Germany, *German Economic Review*, 16(4): 391–407
- Estrada, F. (2006) Trends in violence in Scandinavia according to different indicators. An exemplification of the value of Swedish hospital data, *British Journal of Criminology*, 46(3): 486-504
- Fajnzylber, P., Lederman, D., Loayza, N. (2000). Crime and Victimization: An Economic Perspective, *Economía*, 1 (1).
- Fang, X., Brown, D.S., Florence, C.S., Mercy, J.A. (2012). The economic burden of child maltreatment in the United States and implications for preventions, *Child Abuse & Neglect*, 36(2): 156-165
- Farrell, G., Clark, K., Ellingworth, D., Pease, K. (2005). Of Targets and Supertargets: a Routine Activities Theory of High Crime Rates, Loughborough University, <u>https://dspace.lboro.ac.uk/2134/781</u>, 11 November 2016.
- Felson, R.B., Messner, S.F. Hoskin, A.H. (1999). Victim-offender relationship and calling the police in assaults, *Criminology*, 37(4):931–947
- Felson, R.B., Messner, S.F., Hoskin, A.W., Deane, G. (2002). Reasons for reporting and not reporting domestic violence to the police, *Criminology*, 40(3): 617–648

- Fergusson, D.M., Horwood, L.J., Woodward, L.J. (2000). The stability of child abuse reports: a longitudinal study of the reporting behaviour of young adults, *Psychological Medicine*, 30(3): 529-544.
- Finkelhor, D. (2011). Prevalence of child victimization, abuse, crime, and violence exposure, in J.W.White, M.P. Koss and A.E. Kazdin (Eds.), Violence against women and children: Mapping the terrain (pgs. 9-29). Washington DC: American Psychological Association.
- Finkelhor, D., Omrod, R., Turner, H., Lamby, S.L. (2005). The Victimization of Children and Youth: A Comprehensive, National Survey, *Child Maltreatment*, 10(1): 5-25.
- Finkelhor, D., Turner, H., Omrod, R., Lamby, S.L. (2010). Trends in Childhood Violence and Abuse Exposure: Evidence From 2 National Surveys, Archive of Pediatrics and Adolescent Medicine, 164(3): 238-242.
- Glaeser, E.L., Sacerdote, B. (1999). Why is There More Crime in Cities?, Journal of Political Economy, 107(6): 225-258.
- Greenberg, D.F. (1985). Age, Crime, and Social Explanation. *American Journal of Sociology*, 91: 1-21
- Grove, L.E., Farrell, G., Farrington, D.P., Johnson, S.D. (2012). Preventing Repeat Victimization: A Systematic Review. Brå, The Swedish National Council for Crime Prevention, Editas Västeräs, Stockholm.
- Hardt, J., Rutter, M. (2004). Validity of Adult Retrospective Reports of Adverse Childhood Experiences: Review of the Evidence. *Journal of Child Psychology and Psychiatry* (formerly *Journal of Child Psychology and Psychiatry and Allied Disciplines*), 45(2): 260-273.
- Hindelang, M., Gottfredson, M.R., Garofalo, J. (1978). Victims of Personal Crime, Ballinger Publishing Co., Cambridge MA.

- Kaufman, J., Zigler, E. (1989). The intergenerational transmission of child abuse, in Cicchetti and Carlson (Eds.) Child Maltreatment, Theory and Research on the Causes and Consequences of Child Abuse & Neglect, Cambridge University Press, UK
- Lauritsen, J.L. (2010). Advances and Challenges in Empirical Studies of Victimization, *Journal of Quantitative Criminology*, 26:501-508.
- Lauritsen, J.L., and Heimer, K. (2010). Violent victimization among males and economic conditions. The vulnerability of race and ethnic minorities. *Criminology & Public Policy*, 9(4):665-692.
- Lauritsen, J.L., and Laub, J.H. (2007). Understanding the link between victimization and offending: New reflections on an old idea. *Crime Prevention Studies*, 22: 55–76.
- Levine, J.P. (1976). The potential for crime overreporting in criminal victimization surveys, *Criminology*, 14(3): 307-330.
- Levitt, S. (1999). The changing relationship between income and crime victimization. Fed. Reserve Bank of New York, *Economic Policy Review*, 5: 87–98.
- Margolin, L., Larson, O.W. (1988). Assessing mothers' and fathers' violence towards children as a function of their involuntary participation in family work, *Journal of Family Violence*, 3(3): 209–223.
- McMillan, R. (2001). Violence and the Life Course: The Consequences of Victimization for Personal and Social Development. *Annual Review of Sociology*, 27:1-22.
- Melchert, T.P., Parker, R.L. (1997). Different Forms of Childhood Abuse and Memory. *Child Abuse & Neglect*, 21, 2, s. 125-135.
- Miller, T.R., Cohen, M.A., Wiersema, B. (1996). Victim costs and consequences: a new look, Research Report, National Institute of Justice, U.S. Department of Justice
- Nilsson, A., Estrada, F. (2006) The inequality of victimization: Trends in exposure to crime among rich and poor, *European Journal of Criminology*, 3(4): 387–412.

- Nilsson, A., Estrada, F. (2007). Risky neighbourhoods or individuals at risk? The significance of neighbourhood conditions for violent victimization in residential areas, Journal of Scandinavian Studies in Criminology and Crime Prevention, 8(1): 2–21
- Patterson, E.B. (1991). Poverty, Income Inequality and Community Crime Rates, *Criminology*, 29: 755-76.
- Ross, S.M. (1996). Risk of physical abuse to children of spouse abusing parents, *Child Abuse & Neglect*, 20 (7): 589-598.
- Sampson, R.J., Groves, W.B. (1989). Community Structure and Crime: Testing Social Disorganization Theory. American Journal of Sociology, 94: 774-802.
- Sharpe, T.L. (2014). Race and Violent Victimization, Presentation for the National Institute of Justice Violence and Victimization Workshop, Technical Working Group on Violent Victimization, Washington DC, Dec. 2014.

Shaw, C., McKay, H. (1942) Juvenile Delinquency and Urban Areas. University of Chicago Press.

- Simon, E.M.J. (1996). Legal Treatment of the Victim-Offender Relationships in Crimes Violence, Journal of Interpersonal Violence, 11(1): 94-106.
- Statistics Denmark (2015). Kriminalitet 2014, Danmarks Statistiks publishing, 73th edition, CopenhagenStatisticsDenmark(2016).StatBankDenmarkdatabase,http://www.statbank.dk/statbank5a/default.asp?w=1920, 10 November 2016.
- Straus, M.A. (1994). Beating the devil out of them: Corporal punishment by parents and its effects on children. Lexington Books, NY.
- Straus, M.A., Smith, C. (1990). Family patterns and child abuse, in M.A. Straus & R.J. Gelles (Eds.), *Physical violence in American families: Risk factors and adaptations to violence in 8,145 families* (pp. 245–261). Transaction Publishers, New Brunswick, NJ.
- Tajima, E.A. (2000). The relative importance of wife abuse as a risk factor for violence against children, *Child Abuse & Neglect*, 24 (11): 1383-1398.

- Thacher, D. (2004). The rich get richer and the poor get robbed: inequality in U.S. criminal victimization, 1974–2000. *Journal of Quantitative Criminology*, 20: 89-116.
- Tjaden, P., Thoennes, N. (2000). Full report of the prevalence, incidence and consequences of violence against women: Findings from the National Violence Against Women Survey, U.S. Department of Justice, National Institute of Justice, Washington, DC.
- The U.S. Bureau of Justice Statistics (2016). In 2013 violent and property crime rates declined after two years of increase, *Criminal Victimization 2013*, <u>www.bjs.gov/content/pub/press/cv13pr.cfm</u>, 3 October 2016
- WHO, World Health Organization (2013). European report on preventing child maltreatment, WHORegional Office for Europe, Copenhagen.
- Widom C.S, Wilson, H.W. (2015). Intergenerational Transmission of Violence, in Lindert and Levav (eds.) Violence and Mental Health, Springer Netherlands.

Figures and Tables

Table I. Summary statistics (means) for Non-Victims and Victims of Violence.

	Non-Victims	Victims
Demographic variables		
Age 0-6	0.331	0.027
Age 6-12	0.295	0.120
Age 12-15	0.145	0.285
Age 15-18	0.139	0.426
Age 18-20	0.0895	0.142
Male	0.512	0.590
Ethnic Dane	0.899	0.894
Non-Western	0.0860	0.094
Socioeconomic variables		
Lives with both parents	0.941	0.819
Lives with one parent	0.251	0.441
3 or more children in family	0.289	0.242
Urban	0.414	0.479
1 or 2 young parents (<25 years old at birth)	0.176	0.335
Father income low 25th pctile	0.238	0.317
Mother income low 25th pctile	0.333	0.362
Father married	0.686	0.541
Father employed	0.760	0.648
Father primary school or dropout	0.266	0.415
Father secondary school	0.451	0.408
Father tertiary school	0.283	0.178
Mother married	0.691	0.548
Mother employed	0.717	0.634
Mother primary school or dropout	0.234	0.381
Mother secondary school	0.414	0.390
Mother tertiary school	0.352	0.230
Health and criminal variables*		
Hospital previous year (child)	0.276	0.410
Mental/Nervous illness previous year (child)	0.006	0.021
Hospital previous six years (father)	0.239	0.290
Hospital previous six years (mother)	0.342	0.363
Convict in previous year (child ab. 16) ⁺	0.004	0.013
Convict in previous six years (father)	0.215	0.274
Convict in previous six years (mother)	0.0738	0.107
Victimization variables		
Sexual assault		0.239
Simple violence		0.466
Aggravated violence		0.072
Robbery		0.135
Threats		0.089
# reports in year t		1.041
Repeated victim in year t		0.019
Poly-victim in year t		0.017
# reports between 2001 and 12		1.246
Repeated victim between 2001 and 2012		0.093
Poly-victim between 2001 and 2012		0.100

Observations	16,649,542	64,600
Notes: Author's calculations from Statistics Den	mark, using data on the Dani	sh population younger than
20, 2001-2012. Victims are persons younger that	an 20 who appear in the victi	imization registers over the
period; non-victims are the rest of the populatio	n in the same age group. Vic	ctimization in this table is a
dichotomous variable equal to 1 if the person ex	xperiences at least one victim	nization in a given calendar
year. *For victims, the previous year is the pr	revious 12 months before th	ne assault; for non-victims
(parents), the previous calendar year (six years).	⁺ Means are for the age group	p 16-20: N(Non-Victims) =
3,810,521; N(Victims) = 36,696.		

Figure I: Crime type of first victimization, by age group. Police reports of childhood victimization where the victim appears several times in the registers between 2001 and 2012.



Table II: Reoccurrence of victimization, share b	y ty	pe of crime experienced in the 2	and 3 rd victimizations. Police re	ports of childhood victimization. 2001-2012
	_			

	1 st crime	Ν	$2^{nd} c$	rime: shar	e of total	N in age a	nd first cr	rime categ	ories	3^{rd}	crime: shar	e of tota	l N in age a	and first c	rime categ	gories
				Simple	Aggr.			2^{nd}	2^{nd}		Simple	Aggr.			3 rd	3 rd
age group			Sex	V.	V.	Robbery	Threats	crime: YES	crime: NO	Sex	V.	V.	Robbery	Threats	crime: YES	crime: NO
0-15	sex	9,230	13.8%	4.7%	0.7%	0.8%	1.7%	21.6%	78.4%	4.6%	1.3%	0.3%	0.2%	0.7%	7.1%	92.9%
15-20	sex	7,697	13.2%	8.3%	1.5%	1.1%	3.5%	27.6%	72.4%	3.7%	2.6%	0.6%	0.3%	1.6%	9.0%	91.0%
0-15	simple v.	7,035	2.7%	11.7%	1.5%	2.5%	2.9%	21.3%	78.7%	0.8%	2.3%	0.4%	0.7%	1.1%	5.2%	94.8%
15-20	simple v.	23,804	1.1%	10.4%	1.9%	1.8%	4.1%	19.3%	80.7%	0.3%	2.3%	0.5%	0.4%	1.3%	4.8%	95.2%
12-20	threats	5,616	2.6%	14.3%	3.2%	2.4%	9.2%	31.7%	68.3%	0.5%	3.8%	0.9%	0.8%	3.5%	9.5%	90.5%

Notes: Author's calculations from Statistics Denmark. Each cell shows the percentage of young victims(age 0-20) who experience a second and (or) a third victimization out of the total number of victims aged 0-20 in the corresponding age and first experienced crime (first three columns on each row). Number are for the entire period (2001-2012) and the most common crime groups. For example (first row), 13.8 percent of the children age 0-15 who experienced sexual assault as a first victimization will experience another sexual assault the second time they are victimized, while 7.1 percent of the children age 0-15 will be victimized a third time.

	Dep. var.: 1 or more victimization of type V in a year								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		
	Sex	Simple V	Aggr. V	Robbery	Threats	Repeated	Poly		
Demographic variables									
Age 0-6	0.177**	-0.100**	0.069**	-0.090**	-0.057**	-0.001	-0.015**		
	(0.017)	(0.019)	(0.013)	(0.012)	(0.008)	(0.005)	(0.002)		
Age 6-12	0.311**	-0.164**	-0.029**	-0.061**	-0.057**	0.003	-0.012**		
	(0.010)	(0.015)	(0.005)	(0.008)	(0.005)	(0.003)	(0.001)		
Age 12-15	0.087**	-0.069**	-0.036**	0.035**	-0.018**	0.006**	0.002		
	(0.007)	(0.007)	(0.003)	(0.010)	(0.003)	(0.002)	(0.002)		
Age 18-20	-0.045**	0.045**	0.026**	-0.036**	0.010*	-0.003*	0.001		
	(0.005)	(0.008)	(0.005)	(0.008)	(0.004)	(0.002)	(0.002)		
Male	-0.431**	0.250**	0.046**	0.145**	-0.010**	-0.009**	-0.003*		
	(0.008)	(0.018)	(0.003)	(0.017)	(0.004)	(0.002)	(0.001)		
Non-Western	-0.102**	0.085**	0.071**	-0.104**	0.051**	-0.006*	0.004		
	(0.007)	(0.014)	(0.007)	(0.017)	(0.006)	(0.003)	(0.002)		
Socioeconomic variables									
Lives with both parents	0.030**	-0.004	-0.009*	0.006	-0.023**	-0.012**	-0.008**		
	(0.006)	(0.009)	(0.004)	(0.006)	(0.004)	(0.003)	(0.002)		
Lives with one parent	0.018**	0.015 +	-0.015**	0.002	-0.019**	-0.004+	-0.005*		
	(0.006)	(0.008)	(0.004)	(0.005)	(0.004)	(0.003)	(0.002)		
3 or more children in family	0.011*	0.010+	0.000	-0.016**	-0.005	-0.001	-0.000		
	(0.004)	(0.006)	(0.003)	(0.004)	(0.003)	(0.002)	(0.002)		
Urban	0.222**	-0.192**	-0.103**	0.216**	-0.143**	0.005**	0.016**		
	(0.003)	(0.005)	(0.002)	(0.004)	(0.002)	(0.001)	(0.001)		
1 or 2 young parents	-0.004	0.015**	0.004	-0.014**	-0.000	0.002	0.001		
	(0.004)	(0.005)	(0.003)	(0.004)	(0.003)	(0.001)	(0.001)		
Father income low 25th pctile	0.006	-0.008	0.004	-0.009*	0.008*	0.004*	0.000		
	(0.004)	(0.005)	(0.003)	(0.004)	(0.003)	(0.002)	(0.001)		
Mother income low 25th pctile	0.002	-0.002	0.001	-0.000	-0.000	0.001	0.001		
	(0.004)	(0.005)	(0.003)	(0.003)	(0.004)	(0.001)	(0.001)		
Father married	-0.005	0.009	0.003	-0.005	-0.002	0.003	0.001		
	(0.005)	(0.006)	(0.003)	(0.005)	(0.004)	(0.002)	(0.001)		
Father employed	0.013*	-0.016*	-0.001	0.002	0.003	-0.000	-0.002		
	(0.005)	(0.006)	(0.003)	(0.004)	(0.004)	(0.002)	(0.002)		
Father secondary school	0.005	0.003	-0.004	0.005	-0.009**	-0.003+	-0.001		
	(0.004)	(0.005)	(0.003)	(0.003)	(0.003)	(0.002)	(0.001)		
Father tertiary school	0.013**	-0.010	-0.008*	0.024**	-0.019**	-0.001	-0.005**		
	(0.005)	(0.008)	(0.003)	(0.006)	(0.004)	(0.002)	(0.002)		
Mother married	0.006	-0.006	-0.004	0.005	-0.001	0.000	-0.001		
	(0.005)	(0.007)	(0.003)	(0.004)	(0.004)	(0.002)	(0.002)		
Mother employed	0.002	-0.002	-0.004	0.010*	-0.006	-0.001	-0.000		
	(0.005)	(0.006)	(0.003)	(0.005)	(0.004)	(0.002)	(0.002)		
Mother secondary school	-0.000	0.006	-0.000	-0.001	-0.004	-0.006**	-0.004**		

Table III: Factors underlying the probability of victimization by form of crime. Police reports of childhood victimization, 2001-2011

		Dep. va	r.: 1 or mor	e victimizati	ion of type V	V in a year	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Sex	Simple V	Aggr. V	Robbery	Threats	Repeated	Poly
	(0.005)	(0.006)	(0.003)	(0.003)	(0.004)	(0.002)	(0.001)
Mother tertiary school	0.001	-0.001	-0.008*	0.025**	-0.017**	-0.006**	-0.006**
	(0.005)	(0.008)	(0.004)	(0.006)	(0.005)	(0.002)	(0.002)
Health and criminal variables							
Mental/Nervous illness previous							
year	-0.014	0.044*	-0.008	-0.026*	0.004	0.002	0.008 +
	(0.013)	(0.019)	(0.007)	(0.011)	(0.008)	(0.005)	(0.005)
Hospital previous six years							
(father)	-0.002	0.006	0.000	-0.007+	0.003	0.001	0.000
	(0.004)	(0.005)	(0.003)	(0.004)	(0.003)	(0.002)	(0.001)
Hospital previous six years	0.01.4**	0.000	0.005*	0.005	0.005	0.000	0.00.4**
(mother)	-0.014**	0.009+	0.005*	-0.005+	0.005+	0.000	0.004**
	(0.004)	(0.005)	(0.002)	(0.003)	(0.003)	(0.001)	(0.001)
Convict previous year (child	0.024	0.025	0.055**	0.044*	0.012	0.003	0.011
>10)	-0.024	(0.023	(0.010)	-0.044	-0.012	0.003	0.011
Convict providus six voors	(0.015)	(0.029)	(0.018)	(0.017)	(0.017)	(0.009)	(0.010)
(father)	-0 009*	0.005	-0.001	-0.001	0.005 +	0.001	-0.001
(rutter)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.001)	(0.001)
Convict previous six years	(0.005)	(0.004)	(0.002)	(0.003)	(0.003)	(0.001)	(0.001)
(mother)	-0.006	0.004	0.009*	-0.007+	-0.001	0.001	0.001
	(0.006)	(0.008)	(0.004)	(0.004)	(0.004)	(0.002)	(0.002)
Constant	0.279**	0.332**	0.191**	-0.045**	0.243**	0.010*	0.011**
	(0.011)	(0.014)	(0.006)	(0.013)	(0.008)	(0.005)	(0.003)
Observations	52,363	52,363	52,363	52,363	52,363	52,363	52,363
Adjusted R-squared	0.370	0.114	0.037	0.155	0.021	0.008	-0.000

Notes: Author's calculations from Statistics Denmark. The sample includes all victims of violence younger than 20 in the period 2001-2011 (1 observation per person per year). The dependent variable is a dichotomous variable equal to 1 if the person appears in the victimization registers in the year as a victim of crime type *V*, where *V* is denoted at the top of each column. Coefficient estimates of linear probability regressions with local, time and local-by-time fixed effects are reported with robust standard errors clustered at the municipality level in parenthesis. For age and parents' education, the reference groups are "Age 15-18" and "Primary school or dropout." ** p<0.01, * p<0.05, + p<0.1.

Table IV:	Factors	underlying	the	probability	of	domestic	abuse	by	perpetrator.	Police	reports	of	childhood
victimizatio	on follow	red by a char	<u>ge, 2</u>	2001-2011.				-			-		

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Biological parent		Parent'	s partner	Sib	ling	Other household mb.	
Share in total N	6,70%		1.1	78%	1.7	9%	2.45%	
Demographic variables								
Age 0-6	0.510**	0.502**	0.014 +	0.011	-0.008**	-0.009**	0.167**	0.164**
	(0.017)	(0.016)	(0.008)	(0.008)	(0.003)	(0.003)	(0.015)	(0.015)
Age 6-12	0.198**	0.201**	0.017**	0.014*	0.002	0.001	0.039**	0.045**
	(0.011)	(0.011)	(0.005)	(0.006)	(0.003)	(0.003)	(0.006)	(0.006)
Age 12-15	0.031**	0.024**	0.006**	0.003 +	-0.001	-0.002	0.008**	0.008**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Biologic	al parent	Parent	's partner	Sib	ling	Other hou	sehold mb.
	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Age 18-20	-0.022**	-0.030**	-0.007**	-0.008**	0.001	0.001	0.000	-0.003+
	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Male	-0.010*	-0.032**	-0.009**	-0.008**	-0.007**	-0.005**	-0.014**	-0.028**
	(0.004)	(0.004)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.003)
Non-Western	0.084**	0.075**	-0.011**	-0.011**	0.013**	0.013**	0.043**	0.038**
	(0.008)	(0.008)	(0.002)	(0.003)	(0.003)	(0.003)	(0.007)	(0.006)
Socioeconomic variables								
Lives with both parents	-0.055**	-0.051**	-0.021**	-0.021**	-0.004+	-0.004+	0.022**	0.024**
	(0.005)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)
Lives with one parent	-0.012*	-0.009+	0.007*	0.007*	-0.006**	-0.006**	0.008**	0.009**
	(0.005)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
3 or more children in								
family	0.005	0.006	-0.001	-0.001	0.002	0.002	0.004	0.004
	(0.004)	(0.004)	(0.002)	(0.002)	(0.001)	(0.001)	(0.003)	(0.003)
Urban	-0.213**	-0.192**	0.015**	0.013**	0.002	-0.000	-0.096**	-0.085**
	(0.004)	(0.004)	(0.002)	(0.002)	(0.001)	(0.001)	(0.004)	(0.004)
1 or 2 young parents	0.006+	0.005 +	0.004*	0.004*	-0.004**	-0.004**	0.002	0.002
	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Father income low 25th	0.000*	0.010*	0.002	0.002	0.002*	0.002*	0.002	0.004
petile	0.009*	0.010*	-0.003	-0.002	0.003*	0.003*	0.003	0.004+
Mother income low 25th	(0.004)	(0.004)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
notile	0.001	0.002	0.005*	0.005*	0.003 +	0.003 +	0.006**	0.007**
F	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Father married	-0.002	-0.003	-0.016**	-0.016**	0.001	0.001	-0.006*	-0.006**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Father employed	-0.022**	-0.021**	0.001	0.001	0.001	0.001	-0.006+	-0.005+
r autor omprojea	(0.005)	(0.005)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
Father secondary school	0.004	0.004	-0.000	-0.000	-0.001	-0.001	-0.000	-0.000
	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Father tertiary school	0.004	0.004	0.002	0.002	0.000	0.000	-0.001	-0.001
	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)
Mother married	0.010**	0.010**	0.028**	0.028**	-0.002+	-0.003+	0.008**	0.008**
	(0,004)	(0.004)	(0.003)	(0.003)	(0.001)	(0,001)	(0.003)	(0.003)
Mother employed	-0.010*	-0.011*	-0.004+	-0.005+	-0.004**	-0 004**	-0.003	-0.003
nioulei employea	(0.010)	(0.004)	(0.002)	(0.002)	(0.001)	(0,001)	(0.002)	(0.002)
Mother secondary	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
school	0.000	0.001	-0.001	-0.001	0.001	0.001	0.000	0.000
	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Mother tertiary school	-0.006	-0.005	-0.000	-0.000	-0.001	-0.001	-0.005*	-0.005*
	(0.004)	(0.004)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Health and criminal varia	bles							
Mental/Nervous illness								
previous year	-0.022**	-0.026**	-0.006	-0.006	-0.005*	-0.005*	0.010+	0.008
	(0.006)	(0.006)	(0.004)	(0.004)	(0.002)	(0.002)	(0.005)	(0.005)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Biologic	al parent	Parent	's partner	Sib	ling	Other hou	sehold mb.
Hospital previous six								
years (father)	0.003	0.003	0.001	0.001	0.003*	0.003*	0.001	0.001
	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Hospital previous six								
years (mother)	0.005	0.005	0.004*	0.004*	-0.000	-0.000	0.004*	0.004*
	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Convict previous year $(abild > 16)$	0.021**	0.027**	0.005	0.004	0.002	0.002	0.004	0.001
$(\operatorname{child} > 16)$	-0.051***	-0.05/***	0.005	0.004	-0.002	-0.002	0.004	0.001
Convict previous six	(0.009)	(0.009)	(0.008)	(0.008)	(0.006)	(0.006)	(0.008)	(0.009)
vears (father)	0.009**	0.009**	0.001	0.002	0.000	0.000	0.003	0.003
j •» ()	(0.003)	(0.003)	(0.002)	(0,002)	(0.001)	(0.001)	(0.002)	(0,002)
Convict previous six	(0.005)	(0.005)	(0.002)	(0:002)	(0.001)	(0.001)	(0.002)	(0.002)
years (mother)	-0.003	-0.003	0.003	0.003	0.000	0.000	-0.001	-0.001
	(0.005)	(0.005)	(0.003)	(0.003)	(0.002)	(0.002)	(0.004)	(0.003)
Victimization characterist	tics							
Victim reports	-0.014**	-0.022**	-0.007**	-0.007**	-0.002*	-0.002	-0.006**	-0.010**
	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Several victims	0.011*	0.013**	-0.006**	-0.005**	-0.001	-0.000	0.002	0.002
	(0.005)	(0.005)	(0.002)	(0.002)	(0.001)	(0.001)	(0.003)	(0.003)
Several offenders	-0.000	-0.005	-0.010**	-0.010**	0.002	0.002	0.009**	0.005+
	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)
Following	· · /	· · ·		· · ·	· /		· · /	× ,
hospitalization (48H)	-0.008**	-0.036**	-0.005**	-0.008**	0.001	0.002 +	0.001	-0.014**
	(0.002)	(0.004)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)
Other municipality	0.020**	0.021**	0.001	0.000	-0.000	-0.001	-0.015**	-0.014**
	(0.004)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)
Sexual assault		-0.080**		-0.000		0.006**		-0.048**
		(0.007)		(0.003)		(0.002)		(0.004)
Aggravated violence		0.000		-0.003		0.004*		0.005
		(0.007)		(0.002)		(0.002)		(0.005)
Robbery		-0.053**		-0.007**		-0.001		-0.024**
·		(0.003)		(0.002)		(0.001)		(0.003)
Threats		-0.047**		-0.012**		0.001		-0.028**
		(0.005)		(0.002)		(0.002)		(0.003)
Repeated victim in t		0.024*		0.000		0.004		0.004
		(0.010)		(0.006)		(0.004)		(0.005)
Poly-victim in t		0.017*		0.003		0.001		0.003
		(0.009)		(0.005)		(0.003)		(0.004)
Constant	0.233**	0.274**	0.011*	0.017**	0.005+	0.003	0.104**	0.127**
	(0.008)	(0.009)	(0.004)	(0.004)	(0.003)	(0.003)	(0.005)	(0.005)
Ν	34,893	34,893	34,893	34,893	34,893	34,893	34,893	34,893
Adjusted R-squared	0.211	0.221	0.064	0.065	0.005	0.006	0.069	0.079

Notes: Author's calculations from Statistics Denmark. The sample includes all victims of violence younger than 20 in the period 2001-2011 with a matched charged offender (1 observation for each report). The dependent variable is a dichotomous variable equal to 1 if the victim's perpetrator belongs to the category shown in the column head (e.g., a

biological parent in cols. 1 and 2). Coefficient estimates of linear probability regressions with local, time, and localby-time fixed effects are reported with robust standard errors clustered at the municipality level in parenthesis. For age and parents' education, the reference groups are "Age 15-18" and "Primary school or dropout." The reference group for crime category is simple violence. ** p<0.01, * p<0.05, + p<0.1.

Supplementary material - Appendix





Appendix 2: Factors under	erlying the	probability	of further	police invest	igation. 1	Linear	probability	model	estimates.
Police reports of childhoo	od victimiza	ation. 2001-	-2011	-	-				

	(1)	(2)
Victimization characteristics		
Sexual assault	-0.071**	-0.048**
	(0.003)	(0.004)
Aggravated violence	0.086**	0.087**
	(0.005)	(0.006)
Robbery	-0.004	0.004
	(0.007)	(0.006)
Threats	0.021**	0.019**
	(0.005)	(0.005)
Repeated victim in t	0.001	0.005
	(0.005)	(0.007)
Poly-victim in <i>t</i>	0.014*	0.022**
	(0.006)	(0.008)
Victim reports	-0.068**	-0.069**
	(0.003)	(0.003)
Several victims	-0.396**	-0.397**
	(0.007)	(0.008)
Several offenders	-0.489**	-0.485**
	(0.010)	(0.011)
Following hospitalization (48H)	0.000	-0.001

	(0.003)	(0.003)
Other municipality	0.018**	0.014**
	(0.004)	(0.003)
Demographic variables		
Age 0-6		0.009
		(0.010)
Age 6-12		-0.035**
		(0.005)
Age 12-15		-0.037**
		(0.004)
Age 18-20		-0.008*
		(0.004)
Male		0.027**
		(0.003)
Non-Western		0.005
		(0.005)
Socioeconomic variables		
Lives with both parents		-0.006
		(0.004)
Lives with one parent		-0.008*
		(0.004)
3 or more children in family		0.002
		(0.003)
Urban		-0.030**
		(0.004)
1 or 2 young parents		-0.001
		(0.003)
Father income low 25th pctile		-0.004
		(0.003)
Mother income low 25th pctile		0.000
		(0.002)
Father married		-0.002
		(0.003)
Father employed		-0.003
		(0.003)
Father secondary school		-0.000
		(0.003)
Father tertiary school		-0.003
Mathematical		(0.004)
womer married		0.002
Mathemany laws d		(0.003)
Momer employed		-0.004
Mathematican dama asha 1		(0.003)
momer secondary school		0.000
Mada and a diama and a st		(0.003)
Mother tertiary school		-0.001

		(0.004)
Health and criminal variables		
Mental/Nervous illness previous year		-0.014+
		(0.007)
Hospital previous six years (father)		0.005 +
		(0.002)
Hospital previous six years (mother)		-0.002
		(0.003)
Convict previous year (child >16)		0.032 +
		(0.017)
Convict previous six years (father)		0.002
		(0.003)
Convict previous six years (mother)		0.003
		(0.004)
Constant	1.103**	1.085**
	(0.003)	(0.008)
Observations	67,252	54,390
Adjusted R-squared	0.712	0.721
Fixed effects	NO	YES

Notes: Author's calculations from Statistics Denmark. The sample includes all victims of violence younger than 20 in the period 2001-2011 (1 observation for each report). The dependent variable is a dichotomous variable equal to 1 if the victimization case was followed by a charge. Coefficient estimates of linear probability regressions are reported with robust standard errors clustered at the municipality level in parenthesis. The specification in col. (1) only includes victimization variables. For age and parents' education, the reference groups are "Age 15-18" and "Primary school or dropout." The reference group for crime category is simple violence. ** p<0.01, * p<0.05, + p<0.1.