

Criminal victimization in childhood and adolescence according to official records: the Pelotas (Brazil) birth cohort study

Vitimização por crime na infância e adolescência segundo registros oficiais: coorte de nascimentos de Pelotas, Rio Grande do Sul, Brasil

Victimización por delitos durante la infancia y adolescencia según registros oficiales: la cohorte de nacimientos de Pelotas, Río Grande do Sul, Brasil

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Abstract

This article describes different types of officially recorded victimization among 5,249 children in the 1993 birth cohort in the city of Pelotas, Rio Grande do Sul State, Brazil. Official data were obtained from the Secretariat for Public Security and the Special Court for Children and Youth. Victimization was registered for in 1,150 cohort members, with 1,396 incidents recorded as of December 31, 2012. The total incidence of victimization was 15.7 occurrences per 1,000 person-years, with the majority involving violent victimization (12.7 per 1,000 person-years). Victimization increased gradually in childhood and rapidly throughout adolescence. The highest incidence rates were among females ($p < 0.05$), the poor ($p < 0.05$), children of adolescent mothers ($p < 0.001$), and children of single mothers ($p < 0.05$). The most common violent victimization types were physical injuries, robbery, and crimes against personal freedom; non-violent victimization mainly involved theft. Studies like this help identify lifetime risk and protective factors for victimization, highlighting the importance of surveillance and control measures against violence.

Crime Victims; Violence; Child; Adolescent

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Introduction

Violence is defined as the use of force or power as a form of threat against other persons, groups, or communities, with the likelihood of causing injury, death, psychological harm, alterations in development, or deprivation¹. The World Health Organization (WHO)¹ has declared violence a serious public health problem. According to the United Nations², 468,000 homicides were committed in the world in 2011. In 2010³, 25.5 million years of healthy life were lost due to injuries resulting from interpersonal violence.

A person that suffers mental, physical, or economic harm, or harm by omission, and which violates the criminal code, is considered a “victim”, individually or as a group¹. According to global data, 16% of the general population has been a victim of at least one crime in the previous year, while 40 million children under 15 years of age suffer abuse and neglect⁴. Approximately 150 million girls and 73 million boys under 18 years were forced into sexual relations or suffered forms of victimization by sexual violence that involved physical contact². Between 133 and 275 million children witness domestic violence every year⁴. The *International Crime Victim Survey* (ICVS)⁵, using information on individuals over 16 years of age from 54 countries from 2000 to 2010, showed that countries of Africa had the highest incidence of victimization by theft (15.2%), aggression (19.8%), and sexual crime (14.5%), with 5-year recall; Latin American and Caribbean countries recorded the highest incidence of victimization by robbery (22.2%), and developed countries the highest victimization from domestic violence (12.4%)⁵.

The incidence of victimization in American adolescents 12 to 20 years of age decreased from 175 to 47.5 per 1,000 adolescents between 1993 and 2011⁶. In Australia⁵, the incidence remained stable from 2000 to 2011 (5.1 and 5.9 per 1,000 adolescents, respectively). In Canada⁷, the childhood victimization rate was 9.7 victims per 1,000 children; victimization at 2 and 3 years of age was more common in boys, and after 5 years of age it was more common in girls.

In Brazil, the *National Household Sample Survey* (PNAD)⁸, conducted in 26 states in 2009, covering the population over 10 years of age and using a questionnaire with a one-year recall, showed that 7.4% of Brazilians self-reported victimization by robbery and 1.6% by physical aggression. According to the same survey, victimization by robbery was more common among individuals in the highest family income bracket, while victimization by physical aggression was more common in the lowest income bracket.

The Center for Studies on Violence conducted a joint study in 2010⁹ in 11 cities of Brazil, interviewing 4,025 persons over 16 years of age: 4.2% of victimization in the previous 12 months was due to physical aggression and 0.6% due to physical injury with firearms.

The map of violence against children and adolescents in Brazil¹⁰, based on records from the Information System for Notifiable Diseases (SINAN), showed that victimization involving physical violence in 2011 had an incidence of 20.2 per 100,000 children and adolescents (less than 19 years of age). As for victimization from sexual violence¹⁰, the highest incidence was in the 10 to 14 year-old bracket, with 23.8 per 100,000 adolescents.

The aim of this article was to analyze the different types of victimization recorded in official sources among members of the 1993 birth cohort followed up to 18 years of age in the city of Pelotas, Rio Grande do Sul State, Brazil.

Methodology

The current study was based on information on members of the 1993 *Pelotas Birth Cohort Study* in the city of Pelotas.

The 5,249 live births in the cohort study were searched systematically in the databases of both the Secretariat for Public Security and the Special Court for Children and Youth. In 2013, information on victimization in the cohort was consulted in the archives of the Rio Grande do Sul State Secretariat for Public Security and the Special Court for Children and Adolescents in Pelotas. The Secretariat for Public Security consists of the Military Brigade, the General Forensics Institute, the Civil Police, and the Division of Prison Services (SUSEPE). Police records are reported by these agencies and stored by the Secretariat for Public Security in the Integrated Consultations System. The city of Pelotas has only one circuit court for minors, which hears cases on denial of parental custody, child abuse (< 18 years), and criminal cases involving children (0-11 years) or adolescents (12-18 years)¹¹ as perpetrators, among other proceedings.

A unified database was constructed containing information from both sources. This information allowed identifying the following for each incident of victimization: date of the incident, aggressor's relationship to the victim (family: father, mother, sibling, grandparent, uncle/aunt, cousin, stepfather, stepmother, brother-in-law/sister-in-law; community: boyfriend/girlfriend, friend, neighbor, classmate, or stranger), use of weapon (yes/no), and classification of the crime.

The crimes identified in the different sources were classified according to the Brazilian legislation prevailing at the time of the incident ^{11,12,13} and grouped in the classes presented in Tables 1 and 2. Each article of the law was classified in turn as violent versus non-violent victimization, according to the WHO definition ¹. The analysis excluded victimization from traffic accidents, not considered crimes *per se*.

To ensure standardization of the classification system and adequate data quality control, three undergraduate law students conducted classification independently of each other, after orientation by co-author Joseph Murray, expert in criminology from the University of Cambridge (United Kingdom). The three students later compared the information to assess the classificatory agreement; when there were differences, a dis-

Table 1

Types of victimization according to Brazilian legislation, classified as violent.

Law	Article	Group/Description
		1. Crimes against life
2,848/1940		<i>Penal Code</i>
	121	Murder: to deliberately kill another person
		2. Physical injuries
2,848/1940		<i>Penal Code</i>
	129	To violate another person's physical integrity or health
		3. Endangering life and health
2,848/1940		<i>Penal Code</i>
	132	To endanger the life or health of others: to expose the life or health of others to direct and imminent danger
	133	Neglect of an incompetent person: to abandon a person who is under one's care, custody, watch, or authority and who for any reason is incapable of defending himself/herself from the risks resulting from such neglect
	136	Abuse: to endanger the life or health of a person under one's authority, care, or watch for purposes of upbringing, education, or custody, whether by depriving the person of food and indispensable care or subjecting the person to excessive or inadequate work or abusive correction or discipline
		4. Infringement of personal liberty
2,848/1940		<i>Penal code</i>
	146	Illegal duress: to coerce someone by violence or serious threat, or having reduced his/her ability to resist, or by any other means, in order to force that person to do what the law does not permit or to do what it does not require
	147	Threat: to threaten someone by words, gestures, or in writing, or by any other means, causing unfair and serious harm.
	148	Kidnapping and illegal detention: to deprive someone of their freedom by kidnapping or illegal detention
	149	Modern slavery: to reduce someone to a condition analogous to slavery, whether by submitting them to forced labor or exhaustive workdays, subjecting them to degrading work conditions, using any means to limit their freedom to come and go on grounds of debt bondage to the employer or representative
	150	Invasion of domicile: to enter or remain in someone's domicile or premises, covertly or cunningly, or against the person's explicit or tacit wishes
		5. Robbery and blackmail
2,848/1940		<i>Penal code</i>
	157	Robbery: to steal for oneself or others by means of serious threat or violence against the owner or having used any means to eliminate the person's ability to resist
		6. Crimes against sexual dignity
2,848/1940		<i>Penal code</i>
	213	Rape: to use violence or serious threat to force someone to have sexual intercourse or to commit or submit to another libidinous act
	214	Sexual violence without penetration: any use of violence or coercion to force someone to commit or submit to a libidinous act other than sexual intercourse
	216-A	Sexual harassment: to coerce someone in order to obtain sexual advantage or favor, using one's hierarchical superiority in employment, position, or function
	218	Corruption of minors: to induce someone under 14 (fourteen) years of satisfy another's lust

(continues)

Table 1 (continued)

Law	Article	Group/Description
		7. Crimes against family
2,848/1940		<i>Penal code</i>
	244	Material neglect: without just cause, withholding or failure to provide support to spouse or to child under 18 (eighteen) years of age or unfit for work or to parent or grandparent over 60 (sixty) years of age, not providing them with the necessary resources or failing to provide legally established or adjusted child support; without just cause, to fail to assist a seriously ill child, parent, or grandparent.
	246	Intellectual neglect: failure, without just cause, to provide for primary schooling for school-age child.
	249	Abduction of minor: to abduct a minor (under 18 years of age) or remove from the power of someone who has legal custody of said minor
		8. Misdemeanors
3,688/1941		<i>Misdemeanors Act</i>
	21	Coming to blows with someone
		9. Other violent crimes
10,826/2003		<i>Possession and sale of firearms and ammunition</i>
	15	Firing a firearm or otherwise triggering ammunition in an inhabited place or vicinity, in a public byway or in its direction, without involving the aim of committing another crime: sentence – imprisonment for 2 (two) to 4 (four) years, and fine.
2,848/1940		<i>Penal Code</i>
	137	Brawl: to engage in a brawl, except to separate the contenders
	250	Fire: to cause a fire, thereby endangering the lives, physical integrity, or property of others
	344	Coercion in the course of proceedings: use of violence or serious threat to favor one's interests or those of others, against an authority, party, or any other person acting in or called on to participate in court, law enforcement, administrative, or arbitration proceedings
4,898/1965		<i>Regulates the Right to Representation and due process in Civil Administrative and Criminal Liability, in cases of abuse of authority</i>
	6	Abuse of authority
8,069/1990		<i>Rules on the Statute of Children and Adolescents and other provisions.</i>
	237	Removal of a child or adolescent from the custody of others as provided by law or court order for the purposes of foster home placement.

cussion was held among the three, supervised by the expert in criminology (Joseph Murray) until a consensus was reached.

Mothers of children born from January 1 to December 31, 1993, in the city's five maternity hospitals were interviewed by trained personnel to obtain demographic, socioeconomic, and health data. These children were later followed at different time intervals. Details on the 1993 cohort study have been published in previous articles ^{14,15,16}.

During the perinatal period, data were collected on the following variables (and the respective classifications were made): family income quintile, mother's education in complete years of schooling (0-4, 5-8, ≥ 9 years), maternal age (≤ 19 , ≥ 20 years), mother's self-reported skin color (white, non-white), mother's conjugal status (without partner, with partner), parity (0-1, 2-3, ≥ 4 children), and child's sex (male, female).

The statistical analyses used Stata (StataCorp LP, College Station, USA). Incidence rates were obtained per 1,000 person-years; time exposed to risk was calculated with: date of birth as the start date, and end date as last date until death, the occurrence of victimization, or one of the cohort follow-ups. For those for whom no information was available from a given period, we added half of the time at risk until reaching 18 years, assuming that these losses were distributed uniformly between the groups. For example, for those followed at 11 years, but without subsequent follow-ups and without having died or suffered some incident of victimization, we added 3.5 years to their time at risk. This addition was only applied to 0.8% of the sample. Incidence of victimization according to socioeconomic characteristics was estimated using the *ir* command in the Stata statistical package.

Table 2

Types of victimization according to Brazilian legislation, classified as non-violent.

Law	Article	Group/Description
		10. Theft
2,848/1940		<i>Penal Code</i>
	155	Theft: to take someone's property without their consent
		11. Crimes against honor
2,848/1940		<i>Penal Code</i>
	138	False incrimination: to falsely accuse someone of a criminal act
	139	Slander/Libel: to defame someone by attributing to them a fact that offends their reputation
	140	Intriguing against honor: to offend someone's dignity or decorum
		12. Misdemeanors
3,688/1941		<i>Misdemeanors Act</i>
	61	Lewd and lascivious behavior
	63	Serving alcoholic beverages to minors (under 18 years)
	65	Disturbing the peace
		13. Other crimes classified as non-violent
2,848/1940		<i>Penal Code</i>
	163	Damage: to damage, disable, or degrade someone's property
	168	Unlawful appropriation: to appropriate things from someone who possesses or holds them
	171	Embezzlement: to obtain, for oneself or others, illegal advantage, to the detriment of others, inducing or maintaining someone in error, through deceit, trickery, or any other fraudulent means
	359	Contempt of a court injunction on loss or suspension of rights: to exercise a role, activity, right, authority, or function that has been suspended or rescinded by court injunction
3,688/1941		<i>Misdemeanors Act</i>
	31	To release a dangerous animal, or to entrust same to the custody of an inexperienced person, or to fail to properly restrain said animal

The 1993 birth cohort study was approved by the Ethical Research Committee of the Federal University of Pelotas. Until the cohort members reached 18 years of age, their mothers or legal guardians signed a free and informed consent form. From 18 years on, the form was signed by participants themselves.

Results

Of the total of 5,249 live born children, one-fourth had mothers with four years of schooling or less, and 17.4% of the mothers were under 19 years of age. 77.3% of the children's mothers reported having white skin color and 12.4% lived with a partner. Concerning cohort members, two-thirds were the first child and 50.3% were females (Table 3).

According to official records, 1,150 cohort members appeared in 1,396 police records as victims as of December 31, 2012. The total incidence of victimization was 15.7 per 1,000 person-years. Table 3 shows the incidence rate for victimization

according to socioeconomic characteristics and the child's sex. Incidence was higher in girls ($p < 0.05$), in children of families in the lowest family income quintile ($p < 0.05$), with mothers less than 19 years of age ($p < 0.001$), and with single mothers ($p < 0.05$).

Table 4 shows the incidence of violent and non-violent victimization according to sex. The highest incidence rates for violent victimization were: physical injuries, robbery, blackmail, and crimes against personal liberty. Females had higher incidence rates than males for violent victimization involving crimes against personal liberty ($p < 0.001$), against sexual dignity, and misdemeanors ($p < 0.01$), while males had higher incidence rates than females for violent victimization involving robbery ($p < 0.001$) and crimes against life ($p < 0.01$). For non-violent victimization, the highest incidence rate was for theft (1.7 per 1,000 person-years). Girls had higher incidences of crimes against honor and misdemeanors, when compared to boys (significant differences, $p < 0.001$).

Table 3

Incidence of total victimization and socioeconomic characteristics at birth. 1993 Pelotas Birth Cohort, Rio Grande do Sul State, Brazil.

Variable	Total		Total victimization	
	n	%	Incidents *	Incidence **
Family income quintiles				p < 0.05
1 (lowest)	1,052	20.0	319	18.2
2	1,174	22.4	310	15.6
3	938	17.9	247	15.5
4	1,045	19.9	269	14.9
5 (highest)	1,040	19.8	251	14.4
Maternal schooling (years) ***				p < 0.05
0-4	1,472	28.1	374	16.5
5-8	2,424	46.2	734	17.6
≥ 9	1,350	25.8	288	11.8
Maternal age (years)				
≤ 19	915	17.4	331	21.4
≥ 20	4,333	82.6	1,065	14.5
Maternal skin color				p = 0.6
White	4,058	77.3	1,089	15.8
Non-white	1,189	22.7	306	15.2
Mother's conjugal				p < 0.05
Without partner	649	12.4	209	19.4
With partner	4,600	87.6	1,187	15.2
Parity (number of children at time of index birth)				
0-1	3,300	62.9	868	15.5
2-3	1,353	25.8	378	16.5
≥ 4	596	11.4	150	15.2
Child's sex				p < 0.05
Male	2,606	49.7	631	14.3
Female	2,642	50.3	765	17.1
Total	5,249	100.0	1,396	15.7

* Number of incidents of victimization;

** Incidence per 1,000 person-years at risk;

*** Maximum number missing = 3.

Table 5 shows the incidence rate for victimization according to the aggressor's relationship to the victim and the use of weapons. Community victimization showed a higher incidence (12.6 per 1,000 person-years) when compared to family victimization (3.1 per 1,000 person-years). Among crimes perpetrated by family members, neglect and crimes against family were the most common. When the aggressor was someone from the community, the most common crimes were physical injuries, robbery, blackmail, and crimes against personal liberty. The non-violent crime with the highest incidence was theft. Victims' aggressors used some kind of weapon in 3.5 per 1,000 person-years.

As for age at the time of victimization (Figures 1a and 1b), there was a slow upward trend in victimization up to 11 years of age, and a sharp increase from 11 to 18 years. Violent and non-violent victimization showed similar patterns. Victimization at the hands of community aggressors was more common than family victimization, except in the 5 to 9 year age-bracket.

Discussion

The principal conclusion from this prospective study with more than 5,000 children in a city in southern Brazil is that officially recorded criminal

Table 4

Incidence of different types of victimization according to sex. 1993 Pelotas Birth Cohort, Rio Grande do Sul State, Brazil.

Legal classification	Total		Sex				p-value
	Incidents *	Incidence **	Male		Female		
			Incidents *	Incidence **	Incidents *	Incidence **	
Violent victimization	1,134	12.8	531	12.0	603	13.4	0.1
1. Crimes against life	21	0.2	20	0.5	1	0.0	< 0.01
2. Physical injuries	371	4.2	176	4.0	195	4.3	0.4
3. Endangering life and health	33	0.4	11	0.2	22	0.5	0.07
4. Crimes against personal liberty	288	3.2	99	2.2	189	4.2	< 0.001
5. Robbery and blackmail	292	3.3	184	4.2	108	2.4	< 0.001
6. Crimes against sexual dignity	32	0.4	7	0.2	25	0.6	< 0.01
7. Crimes against family	11	0.1	7	0.2	4	0.1	0.3
8. Misdemeanors against person	67	0.8	20	0.5	47	1.0	< 0.01
9. Other violent crimes	19	0.2	7	0.2	12	0.3	0.2
Non-violent victimization	262	2.9	100	2.3	162	3.6	< 0.01
10. Theft	150	1.7	71	1.6	79	1.8	0.6
11. Crimes against honor	61	0.7	11	0.2	50	1.1	< 0.001
12. Misdemeanors	26	0.3	6	0.1	20	0.4	< 0.05
13. Other non-violent crimes	25	0.3	12	0.3	13	0.3	0.9
Total victimization	1,396	15.7	631	14.3	765	17.1	< 0.05

* Number of incidents of victimization;

** Incidence per 1,000 person-years at risk.

victimization increases gradually during childhood and then rapidly throughout adolescence, and that violent crimes showed the highest incidence. The highest incidence rates for violent victimization were physical injuries, robbery and blackmail, and crimes against personal liberty, while the highest incidence rate for non-violent victimization involved theft. To our knowledge, this is the first prospective study on the incidence of officially recorded victimization, and it is also a pioneering study on criminal victimization in childhood and adolescence in a low or middle-income country.

Various studies on perpetration of crime (unlike those on victimization) have used official records and questionnaires to assess crime¹⁷. Criminal records tend to measure more serious crimes, while questionnaires measure more frequent and less serious crimes¹⁸. However, previous studies on victimization have only used questionnaires or interviews to measure incidents of victimization retrospectively. In Brazil, official records begin when a police report is filed, while in many countries these records only include data on arrests and convictions, which may explain

why many other studies of victimization do not include official law enforcement records.

A clear advantage of official records on victimization is that they provide detailed information gathered when the incident occurred, for example, they date of the alleged crime and its legal classification. The obvious disadvantage of official records is that a significant proportion of crimes are not reported to the police. According to the *British Crime Survey*¹⁹, only 39% of crimes are reported to law enforcement agencies in the United Kingdom. Instituto Futuro Brasil²⁰ revealed 68% underreporting in the city of São Paulo, consistent with the findings from the British survey. The main reasons identified by international studies for victims not to report crimes¹⁹ have to do with the lack of severity of some crimes and a lack of trust in the police. Other reasons cited in the literature^{21,22} attribute lack of reporting of violent victimization to a so-called “code of silence”, whereby family, friends, neighbors, schoolteachers and school staff, and even victims themselves refrain from filing police complaints due to fear of subsequent violent reprisals.

Table 5

Number of incidents of victimization and incidence rates for different types of victimization, according to aggressor's relationship to victim and use of weapons. 1993 Pelotas Birth Cohort, Rio Grande do Sul State, Brazil.

Características	Total	Aggressor's relationship to victim				Use of weapons			
		Family		Community		Without weapon		With weapon	
		Incidents *	Incidence **	Incidents *	Incidence **	Incidents *	Incidence **	Incidents *	Incidence **
Violent victimization	1,134	243	2.7	891	10.0	823	9.3	311	3.5
1. Crimes against life	21	1	0.0	20	0.2	1	0.0	20	0.2
2. Physical injuries	371	93	1.0	278	3.1	318	3.6	53	0.6
3. Endangering life and health	33	32	0.4	1	0.0	33	0.4	0	0.0
4. Crimes against personal liberty	288	71	0.8	217	2.4	252	2.8	36	0.4
5. Robbery and blackmail	292	0	0.0	292	3.3	93	1.0	199	2.2
6. Crimes against sexual dignity	32	12	0.1	20	0.2	31	0.3	1	0.0
7. Crimes against family	11	11	0.1	0	0.0	11	0.1	0	0.0
8. Misdemeanors against person	67	20	0.2	47	0.5	66	0.7	1	0.0
9. Other violent crimes	19	3	0.0	16	0.2	18	0.2	1	0.0
Non-violent victimization	262	29	0.3	233	2.6	262	2.9	0	0.0
10. Theft	150	1	0.0	149	1.7	150	1.7	0	0.0
11. Crimes against honor	61	15	0.2	46	0.5	61	0.7	0	0.0
12. Misdemeanors	26	3	0.0	23	0.3	26	0.3	0	0.0
13. Other non-violent crimes	25	10	0.1	15	0.2	25	0.3	0	0.0
Total victimization	1,396	272	3.1	1,124	12.6	1,085	12.2	311	3.5

* Number of incidents of victimization;

** Incidence per 1,000 person-years at risk.

The current study detected a large increase in officially recorded victimization over the course of adolescence. Adolescence is a time of important changes in cognition, behavior, and social orientation²³ which can increase the risk of victimization²⁴, especially in the community. Involvement in crime also increases during adolescence²⁵, and there is a strong correlation between perpetration and victimization²⁶. Part of the increase in officially reported victimization during adolescence may be explained by an increase in the rate of reporting by victims themselves, as opposed to childhood, when reporting is done mostly by the victim's parents.

There were important differences in officially recorded victimization according to the child's sex and some of the family's social and demographic characteristics. The study showed significant differences in victimization between boys and girls, consistent with other studies^{8,21,27,28,29}. Women are more prone to report violent victimization involving crimes against their sexual dignity, against their personal freedom, and misdemeanors against their person^{29,30,31}. Meanwhile, men mainly report violent victimization involving robbery, physical aggression, and crimes against life^{7,21,32,33,34,35,36}. Non-violent victim-

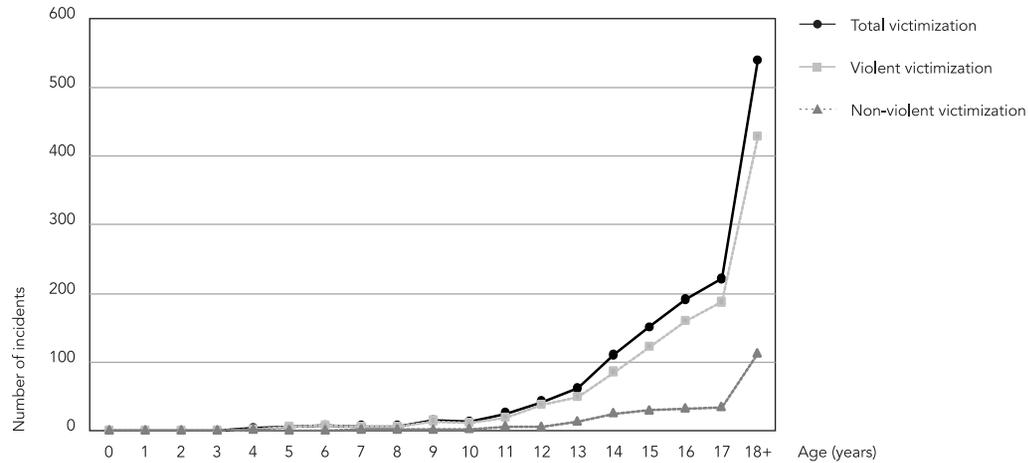
ization involving crimes against honor (false incrimination, slander, libel) was more common in women, corroborating other studies^{29,30,31,32,33,34,35,36,37,38,39}. Studies in many countries show that men are more involved in violence and crime when compared to women⁴⁰. Therefore, the greater propensity of males towards being victims of robbery, aggression, and crimes against life might be explained by greater male participation in crime. Since the majority of sexual crimes are committed against the opposite sex²⁹, the higher rate of male perpetrators may also explain the higher incidence of sexual victimization in women.

As documented by multiple studies^{20,21,37,41,42,43,44}, low family income is an important factor in violent victimization. The current study's results showed an inversely proportional relationship between family income and victimization. Lower maternal education was also inversely associated with victimization, as in other studies^{20,37}. The fact that children of single mothers showed higher incidence of victimization may reflect that single mothers have fewer resources to watch over and protect the children in families without a father present, or it may reflect other socio-demographic factors associated with the

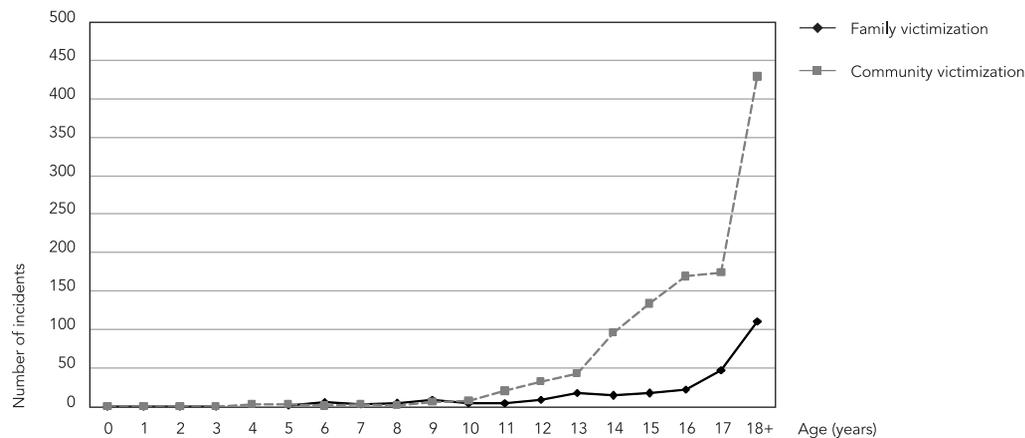
Figure 1

Victimization according to age, type of victimization, and victim's relationship to aggressor. 1993 Pelotas Birth Cohort, Rio Grande do Sul State, Brazil.

1a) Types of victimization



1b) Aggressor's relationship to victim



mother's conjugal status, such as family income. Birth cohort members born to teenage mothers had a higher incidence of victimization^{45,46,47,48}. Teenage pregnancy is an important risk factor to be contemplated in public health strategies, aimed at preventing violence against children and adolescents and its consequences.

Direct comparisons of incidence rates in different Brazilian and international studies are difficult, due to differences in the procedures for

recording, characterization, and classification of victimization, diversity of ages in the target population, and diverse data collection methods. Studies in the literature on victimization^{14,36,49,50,51,52} used different types of questionnaires with different recall periods for the incidents. Many studies also focus on high-risk target groups^{53,54,55,56,57}.

Studies in developing countries are scarce, and most focus on the adult population or indi-

viduals older than eleven years^{20,21,32,33,37,44,48}. Risk factors are investigated during the interview, leading to recall bias if the events or exposures occurred at early ages. Many studies in the literature include any form of victimization, like fights between siblings, school bullying, or witnessing violence in the neighborhood or school, which hinders comparison between different studies.

The study's principal limitation is that no data were obtained on self-reported victimization, to compare with official records. In addition, 26 older court cases could not be located in the Circuit Court archives. Another 39 cases of letters rogatory were located that indicate that the respective cases were filed with other circuit courts, not Pelotas. After contacting the various circuit courts, 67% of these cases were clarified. Notwithstanding the limitation involved in locating some cases, the study adopted a conservative approach, i.e., the results may actually be underestimated. We preferred this more conservative approach rather than potentially overestimating the results.

Demographic and socioeconomic factors collected at the child's time of birth may influence different forms of victimization of adolescents later in life, as demonstrated in other studies^{4,8,21,22,33,48,52}. Official crime data are known to potentially reflect only the "tip of the iceberg", but it is important for future epidemiological studies to adopt a longitudinal design, collecting detailed information on the victimization recorded in official databases and self-reported by participants, in order to better elucidate the problem. Such research would also enable careful profiling of victimization, identifying risk and protective factors and possible consequences over the individual's life.

More efforts at surveillance and detection of violence need to be implemented, controlled, and prioritized through efficient communication networks, with active participation by teachers, school officials, community workers, health professionals, law enforcement agencies, public ombudsman's offices, community leaders, and other stakeholders.

Contributors

E. A. G. Gallo, A. M. B. Menezes, J. Murray, and F. C. Wehrmeister participated in the data analysis, writing of the manuscript, and approval of the final version. L. A. D. Silva, H. Gonçalves, and F. Barros collaborated in writing the article, critical revision of the intellectual content, and approval of the final version.

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References

1. Krug EG, Mercy J, Dahlberg L, Mercy JA, Zwi AB, Lozano R. The world report on violence and health. World report on violence and health. Geneva: World Health Organization; 2002.
2. United Nations Office on Drugs and Crime. Global study on homicide. Vienna: United Nations Office on Drugs and Crime; 2011.
3. Murray CJ, Vos T, Lozano R, Naghavi M, Flaxman AD, Michaud C, et al. Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; 380:2197-223.
4. Dijk J, Kesteren J, Smit P. Criminal victimisation in international perspective: key findings from the 2004-2005 ICVS and EU ICS. Tilburg: Universiteit van Tilburg; 2007.
5. Baliki G. Crime and victimization. Background note for the World Development Report 2014: risk and opportunity. Berlin: German Institute for Economic Research, 2014.
6. Truman JL, Planty M. Criminal victimization, 2011. Washington DC: Bureau of Justice Statistics; 2012.
7. Trocmé N. Prevention of child maltreatment (abuse/neglect). Montreal: Centre of Excellence for Early Childhood Development; 2005.
8. Instituto Brasileiro de Geografia e Estatística. Pesquisa Nacional por Amostra de Domicílios (PNAD-2009). Rio de Janeiro: Instituto Brasileiro de Geografia e Estatística; 2009.
9. Cardia N, Cinoto R. Pesquisa nacional, por amostragem domiciliar, sobre atitudes, normas culturais e valores em relação à violação de direitos humanos e violência: um estudo em 11 capitais de estado. São Paulo: Núcleo de Estudos da Violência, Universidade de São Paulo; 2012.
10. Waiselfisz JJ. Mapa da violência 2012: crianças e adolescentes do Brasil. Rio de Janeiro: Centro Brasileiro de Estudos Latino-Americanos; 2012.
11. Presidência da República. Decreto Lei nº 3.688, 3 de outubro de 1941. Lei das Contravenções Penais. Diário Oficial da União 1941; 3 out.
12. Presidência da República. Lei Federal nº 8.069 de 13 de julho de 1990. Dispõe sobre o Estatuto da Criança e do Adolescente e dá outras providências. Diário Oficial da União 1990; 16 jul.
13. Presidência da República. Decreto-Lei nº 2.848, 17 de dezembro de 1940. Código Penal. Diário Oficial da União 1940; 31 dez.
14. Victora C, Araújo C, Menezes A, Hallal PC, Vieira MF, Neutzling MB, et al. Methodological aspects of the 1993 Pelotas (Brazil) Birth Cohort Study. *Rev Saúde Pública* 2006; 40:39-46.
15. Victora C, Hallal P, Araújo C, Menezes AM, Wells JC, Barros FC. Cohort profile: the 1993 Pelotas (Brazil) birth cohort study. *Int J Epidemiol* 2008; 37:704-9.
16. Gonçalves H, Assunção MC, Wehrmeister FC, Oliveira IO, Barros FC, Victora CG, et al. Cohort profile update: the 1993 Pelotas (Brazil) Birth Cohort follow-up visits in adolescence. *Int J Epidemiol* 2014; 43:1082-8.
17. Jolliffe D, Farrington D, Hawkins J, Catalano RF, Hill KG, Kosterman R. Predictive, concurrent, prospective and retrospective validity of self-reported delinquency. *Crim Behav Ment Health* 2003; 13:179-97.
18. Farrington D, Jolliffe D, Hawkins J. Comparing delinquency careers in court records and self-reports. *Criminology* 2003; 41:933-58.
19. MacDonald Z. Official crime statistics: their use and interpretation. *The Economic Journal* 2002; 112:F85-F106.
20. Madalozzo R, Furtado GM. Um estudo sobre a vitimização na cidade de São Paulo. *Revista de Economia Política* 2007; 31:1-18.
21. Ministério da Justiça. Pesquisa Nacional de Vitimização. Sistema Nacional de Estatísticas de Segurança Pública e Justiça Criminal (SENASP). http://www.crisp.ufmg.br/wp-content/uploads/2013/10/Relat%C3%B3rio-PNV-Senasp_final.pdf (accessed on 12/Jun/2015).
22. Violência contra a criança e o adolescente: proposta preliminar de prevenção e assistência à violência doméstica. Brasília: Ministério de Saúde/Serviço de Assistência à Saúde do Adolescente; 1997.
23. Blakemore SJ, Mills KL. Is adolescence a sensitive period for sociocultural processing? *Annu Rev Psychol* 2014; 65:187-207.
24. Macmillan R. Violence and the life course: the consequences of victimization for personal and social development. *Annu Rev Sociol* 2001; 27:1-22.
25. Farrington DP. Age and crime. In: Tonry M, Morris N, editors. *Crime and justice: an annual review of research*. Chicago: University of Chicago Press; 1986. p. 189-250.
26. Lauritsen JL, Sampson RJ, Laub JH. The link between offending and victimization among adolescents. *Criminology* 1991; 29:265-92.
27. Instituto Brasileiro de Geografia e Estatística. Pesquisa de informações básicas municipais. Perfil dos municípios brasileiros. Rio de Janeiro: Instituto Brasileiro de Geografia e Estatística; 2004.
28. Finkelhor D, Turner H, Ormrod R, Hamby SL. Violence, abuse, and crime exposure in a national sample of children and youth. *Pediatrics* 2009; 124:1411-23.
29. Hamby S, Finkelhor D, Turner H. Perpetrator and victim gender patterns for 21 forms of youth victimization in the National Survey of Children's Exposure to Violence. *Violence Vict* 2013; 28:915-39.
30. Burgos MB. Vitimização na região metropolitana do Rio de Janeiro: um estudo sobre ameaça e agressão. In: Duarte MSB, Pinto AS, Campagnac V, organizadores. *Pesquisa de condições de vida e vitimização - 2007*. Rio de Janeiro: Instituto de Segurança Pública; 2008. p. 126-43. (Série Análise Criminal, 2).
31. Yahaya I, Uthman OA, Soares J, Macassa G. Social disorganization and history of child sexual abuse against girls in sub-Saharan Africa: a multilevel analysis. *BMC Int Health Hum Rights* 2013; 13:33.

32. Rolim M. Pesquisa de Vitimização na Cidade de Canoas/RS: relatório final. <http://www.rolim.com.br/2009/VitimizacaoCanoasPDF.pdf> (accessed on 25/Jun/2015)
33. Beato C, Peixoto B, Andrade M. Crime, oportunidade e vitimização. *Rev Bras Ciênc Soc* 2004; 19:73-89.
34. Office for National Statistics. The crime survey for England and Wales. <http://www.ons.gov.uk> (accessed on 24/Apr/2014).
35. Kilpatrick DG, Saunders BE. National Survey of Adolescents in the United States, 1995. Ann Arbor: Inter-university Consortium for Political and Social Research; 2000.
36. Finkelhor D, Ormrod R, Turner H, Hamby SL. The victimization of children and youth: a comprehensive, national survey. *Child Maltreat* 2005; 10:5-25.
37. Pavão Xavier G, Aguiar de Oliveira C. Determinantes da vitimização criminal no Estado do Rio Grande do Sul. <http://www.pucrs.br/eventos/encontroeconomia/download/mesas/DeterminantesDaVitimizacao.pdf> (accessed on 13/Jul/2014).
38. Finkelhor D, Hashima PY. The victimization of children and youth. A comprehensive overview. In: White SO, editor. *Handbook of youth and justice*. New York: Plenum Publishers; 2001. p. 49-78.
39. Fonseca DH, Ribeiro CG, Leal NSB. Violência doméstica contra a mulher: realidades e representações sociais. *Psicol Soc* 2012; 24:307-14.
40. Moffitt TE, Caspi A, Rutter M, Silva PA. Sex differences in antisocial behaviour: conduct disorder, delinquency, and violence in the Dunedin Longitudinal Study. Cambridge: Cambridge University Press; 2001.
41. Minayo MCS. Violência contra crianças e adolescentes: questão social, questão de saúde. *Rev Bras Saúde Mater Infant* 2001; 1:91-102.
42. Child Welfare Information Gateway. *Child maltreatment 2012: summary of key findings*. Washington DC: US Department of Health and Human Services/Children's Bureau; 2014.
43. United Nations Children's Fund. *The state of the world's children*. <http://www.unicef.org/sowc2011> (accessed on Feb/2011).
44. Duarte MSB, Pinto AS, Campagnac V, organizadores. *Pesquisa de condições de vida e vitimização – 2007*. Rio de Janeiro: Instituto de Segurança Pública; 2008. (Série Análise Criminal, 2).
45. Finkelhor D, Asdigian NL. Risk factors for youth victimization: beyond a lifestyles/routine activities theory approach. *Violence Vict* 1996; 11:3-19.
46. Hindelang MJ, Gottfredson MR, Garofalo J. *Victims of personal crime: an empirical foundation for a theory of personal victimization*. Cambridge: Ballinger; 1978.
47. Stein BD, Jaycox LH, Kataoka S, Rhodes HJ, Vestal KD. Prevalence of child and adolescent exposure to community violence. *Clin Child Fam Psychol Rev* 2003; 6:247-64.
48. Cruz J. La victimización por violencia urbana: niveles y factores asociados en ciudades de América Latina y España. *Rev Panam Salud Pública* 1999; 5:259-67.
49. Northcott M. *Youth experiences of victimization: a contextual analysis*. Toronto: Ontario Justice Education Network; 2011.
50. Lewit EM, Baker LS. Children as victims of violence. *The Juvenile Court* 1996; 6:147-56.
51. Turner H, Finkelhor D. Developmental victimization survey (DVS). <http://www.ndacan.cornell.edu/> (accessed on 24/Jun/2015).
52. Hashima PY, Finkelhor D. Violent victimization of youth versus adults in the National Crime Victimization Survey. *J Interpers Violence* 1999; 14: 799-820.
53. Zinner SH, Conelea CA, Glew GM, Woods DW, Budman CL. Peer victimization in youth with Tourette syndrome and other chronic tic disorders. *Child Psychiatry Hum Dev* 2012; 43:124-36.
54. Wooldredge J, Steiner B. Violent victimization among state prison inmates. *Violence Vict* 2013; 28:531-51.
55. van Dorn RA. Correlates of violent and nonviolent victimization in a sample of public high school students. *Violence Vict* 2004; 19:303-20.
56. Tsigebrhan R, Shibre T, Medhin G, Fekadu A, Hanlon C. Violence and violent victimization in people with severe mental illness in a rural low-income country setting: a comparative cross-sectional community study. *Schizophr Res* 2014; 152:275-82.
57. Pereda N, Guilera G, Abad J. Victimization and polyvictimization of Spanish children and youth: results from a community sample. *Child Abuse Negl* 2014; 38:640-9.

Resumo

Descrição dos diferentes tipos de vitimização registrados oficialmente para as 5.249 crianças da coorte de nascimento da cidade de Pelotas, Rio Grande do Sul, Brasil. Dados oficiais foram obtidos na Secretaria de Segurança Pública e no Juizado da Infância e Juventude. A vitimização ocorreu em 1.150 membros, com 1.396 ocorrências registradas até 31 de dezembro de 2012. A taxa de incidência da vitimização total foi 15,7 por 1.000 pessoas/ano, sendo a maioria por vitimização violenta (12,7 por 1.000 pessoas/ano). A vitimização aumentou gradualmente na infância e rapidamente ao longo da adolescência. As maiores incidências foram entre mulheres ($p < 0,05$), mais pobres ($p < 0,05$), com mães adolescentes ($p < 0,001$) e sem companheiro ($p < 0,05$). Vitimização violenta mais incidente foi por crimes com lesões corporais, roubo e crimes contra a liberdade individual; a não violenta foi por crimes de furto. Estudos como o presente permitiriam identificar fatores de risco e protetores ao longo da vida do indivíduo, salientando a importância da implementação de medidas de vigilância e controle da violência.

Vítimas de Crime; Violência; Criança; Adolescente

Resumen

Descripción de los diferentes tipos de victimización registradas oficialmente en 5.249 niños de la cohorte de nacimientos de la ciudad de Pelotas, Río Grande do Sul, Brasil. Los datos oficiales fueron obtenidos en la Secretaría de Seguridad Pública y en el Juzgado de la Infancia y Juventud. La victimización se produjo en 1.150 miembros, con 1.396 casos registrados hasta el 31 de diciembre de 2012. La tasa de incidencia de la victimización total fue 15,7 por 1.000 personas-año, siendo la mayoría por victimización violenta (12,7 por 1.000 personas-año). La victimización aumentó gradualmente en la infancia y rápidamente a lo largo de la adolescencia. Las mayores incidencias fueron entre mujeres ($p < 0,05$), pero pobres ($p < 0,05$), con madres adolescentes ($p < 0,001$) y sin compañero ($p < 0,05$). La victimización violenta más incidente fue debida a crímenes con lesiones corporales, robo y crímenes contra la libertad individual; la no violenta por delitos de hurto. Estudios como el actual permitirían identificar factores de riesgo y protectores a lo largo de la vida del individuo, resaltando la importancia de la implementación de medidas de vigilancia y control de la violencia.

Víctimas de Crimen; Violencia; Niño; Adolescente

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