

# Physical violence against children and adolescents in Recife: a 5-year retrospective study

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## KEYWORDS

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## ABSTRACT

The aim of the present study was to analyze the prevalence results of physical violence against children and adolescents in a 5-year period in Recife, Brazil. Inter-personal violence is one of the most recognizable forms of child aggression and has become as an imperative public health issue. All violence related forensic reports performed between 2009 and 2013 in the clinical services of the Institute of Legal Medicine Antônio Percivo Cunha were analyzed. Victims were classified according to sex, age, relationship with perpetrator, injuries and year of occurrence. Statistical analysis was performed using the SPSS (version 22.0). Continuous variables were described and when appropriate, frequencies were displayed and compared. The association between variables was evaluated using chi-square and Fisher's exact test. The margin of error for the statistical tests was 5.0%. A total of 9783 occurrences were evaluated, involving mainly male subjects (n=5447, 55.7%). Victims' mean age was 13.9 years, the most common perpetrators were victims' acquaintances (n=2538, 25.9%). Facial injuries were the most frequent affecting a little over a fifth of the total sample (n=3673, 20.1%). These findings support the important role dentists can play in identifying and reporting physical violence against children and adolescents.

## INTRODUCTION

Physical violence against children and adolescents (PVCA) is related to inter-personal violence, where there may not be any personal relationship between the abuser and the victim.<sup>1</sup> It differs from child abuse, which refers only to any act of commission or omission by a parent or care giver that results in harm, potential harm, or threat to a child.<sup>2</sup> PVCA is the most recognizable form of child aggression,<sup>3</sup> and includes child abuse and other situations, such as dating violence,<sup>4</sup> violence against children from school staff,<sup>5</sup> bullying, children who sexually abuse other children, among others.<sup>6</sup> PVCA occurs when a child or adolescent is victim or is at risk of being harmed by relatives, care givers, known or unknown persons.<sup>7</sup>

Although the PVCA is studied worldwide, it is difficult to know its real prevalence, since the cultural, legal, conceptual and methodological differences of the regional studies, together with the under reporting of cases, make it difficult to consolidate the data on the subject.<sup>8</sup>

A study on the prevalence of physical violence against children and adolescents refers that, from January 2008 to October

2012, 39798 cases of aggression to children and adolescents were reported<sup>9</sup>. Yet, it has been stated that, in Brazil, for each case of physical abuse, 10 to 20 are not registered<sup>10</sup>, which confirms the under reporting tendency reported in literature<sup>11</sup>, also described in other countries, like Portugal, Canada and Australia, where the prevalence of the problem is also underestimated<sup>2,12</sup>. Problems associated with short observation period studies and small sample sizes, make it difficult to know the real proportion of the problem and are cited as likely reasons for the under reporting<sup>3</sup>. However, not knowing the real prevalence of this phenomenon impairs the development of preventive strategies aiming at PVCA reduction. Moreover, the forensic community has been increasingly confronted with cases in which a differential diagnosis between accidental and deliberately inflicted trauma is critical. Thus, knowledge about the whole PVCA phenomena may be crucial. The aim of this study was to analyze the prevalence of PVCA in a 5-year period in Recife, Brazil, characterizing the subjects involved, the nature of the injuries suffered, and the victim actions after the occurrence.

#### MATERIALS AND METHODS:

All forensic reports of PVCA performed at the Institute of Legal Medicine Antônio Percivo Cunha (IMLAPC), in Recife, Brazil, in a five-year period were analysed. Inclusion criteria were confirmed cases of physical aggression registered at the IMPLAC, being the victims' age up to 18 years and occurrence taking place from January 2009 to December 2013. Cases of sexual violence, neglect, and psychological violence were excluded. Collected data concerned victim's sex and age, year of occurrence, time elapsed between the aggression and the examination, place of occurrence, injury site, alleged offender, type of medical care sought, history of past violent episodes and the nexus between the complaint and the injury type (causation). Body regions were divided into: head, face, neck; collar bone/spine; chest; abdomen; pelvis; right arm; left arm; right leg; left leg. Data was collected from the files by a single researcher, considering the studied variables.

Data was analysed using SPSS (Social Package for Social Sciences), version 22.0. Frequencies were displayed and continuous variables were described using mean, standard deviation (SD),

minimum, and maximum values. The association between variables was evaluated using the chi-square or Fisher's exact test. The margin of error for the statistical tests was 5.0%.

#### RESULTS

A total of 9783 cases fitted the defined inclusion criteria. Cases distribution remained fairly constant between the studied years, occurring only a more pronounced increase between 2009 and 2010, and a slight and continuous decrease from 2010 to 2013 (Table 1).

**Table 1:** Occurrence of PVCA in the 5-year period

Year	Total cases: 9783	
	n	%
2009	1886	19.3%
2010	2213	22.6%
2011	1972	20.2%
2012	1893	19.3%
2013	1819	18.6%
Mean±SD	1956.6±153.25	

Mean victims' age was  $13.9 \pm 3.78$  (minimum age=0 and maximum age=17). Table 2 displays victims' age distribution according sex. Most occurrences happened in ages 16 and 17 (50.9% in males and 46.5% in females) with significant differences between age groups and sex ( $p \leq 0.001$ ) (Table 2). Males were most affected by violence ( $n=5447$ ) in every age group except 12 to 14 years old. The most frequent offender overall were victims' acquaintances, but there were differences according the victim's sex ( $p \leq 0.001$ ), with police officers being the most common aggressor in males (35.9%), and acquaintances in females (32.4%) (Table 3).

Public places were the most common locations where the events took place, for both sexes, representing 52.4% of all occurrences, with significant differences in the percentage of occurrences between sexes ( $p \leq 0.001$ ) (Table 4).

A significant proportion of the victims did not receive medical care (84.8%), and the large majority (98.0%) reported it as being the first occurrence.

The region of the body most affected was the face (20.1%), and no statistical significant differences between sexes were found ( $p \leq 0.001$ ) (Tables 5).

**Table 2:** Victims' age distribution according sex, n (%)

Age groups (in years)	Male	Female	Total
0	22(0.4)	16(0.4)	38(0.4)
1	47(0.9)	46(1.1)	93(1.0)
2	50(0.9)	44(1.0)	94(1.0)
3	63(1.2)	48(1.1)	111(1.1)
4	50(0.9)	48(1.1)	98(1.0)
5	59(1.1)	44(1.0)	103(1.1)
6	84(1.5)	43(1.0)	127(1.3)
7	75(1.4)	60(1.4)	135(1.4)
8	95(1.7)	55(1.3)	150(1.5)
9	109(2.0)	64(1.5)	173(1.8)
10	136(2.5)	101(2.3)	237(2.4)
11	157(2.9)	122(2.8)	279(2.9)
12	218(4.0)	240(5.5)	458(4.7)
13	302(5.5)	395(9.1)	697(7.1)
14	454(8.3)	541(12.4)	995(10.2)
15	752(13.8)	692(15.9)	1444(14.8)
16	1253(23.0)	880(20.2)	2133(21.8)
17	1521(27.9)	897(20.6)	2418(24.7)
TOTAL	5447(55.7)	4336(44.3)	9783(100)

**Table 4:** Place of occurrence according with sex, n (%)

Location	Male	Female	TOTAL
Public place	3406(62.5)	1725(39.8)	5131(52.4)
Home	782(14.4)	1216(28.0)	1998(20.4)
Not disclosed	672(12.3)	1035(23.9)	1707(17.4)
Institution	351(6.4)	119(2.7)	470(4.8)
School	236(4.3)	241(5.6)	477(4.9)
TOTAL	5447(55.7)	4336(44.3)	9783(100)

**Table 3:** Alleged offenders' distribution according sex of the victim, n (%)

Offenders	Male	Female	TOTAL
Acquaintance	1135(20.8)	1403(32.4)	2538(25.9)
Police officers	1956(35.9)	163(3.8)	2119(21.7)
Not disclosed	771(14.2)	1070(24.7)	1841(18.8)
Unknown to the victim	745(13.7)	408(9.4)	1153(11.8)
Mother	268(4.9)	280(6.5)	548(5.6)
Other family member	169(3.1)	303(7.0)	472(4.8)
Father	207(3.8)	201(4.6)	408(4.2)
Spouse	9(0.2)	215(5.0)	224(2.3)
Stepfather	89(1.6)	83(1.9)	172(1.8)
Boyfriend/girlfriend	14(0.3)	141(3.3)	155(1.6)
Stepmother	25(0.5)	36(0.8)	61(0.6)
Professor (teacher)	17(0.3)	21(0.5)	38(0.4)
Private security	30(0.6)	4(0.1)	34(0.3)
Other care giver	12(0.2)	6(0.1)	18(0.2)
Self-inflicted	0(0)	2(0)	2(0)
TOTAL	5447(55.7)	4336(44.3)	9783(100)

**Table 5:** Place of injury according with the victims' sex, n (%)

Injury site	Male	Female	TOTAL
Skull	912(9.5)	747(8.5)	1659(9.1)
Face	1698(17.7)	1975(22.5)	3673(20.1)
Neck	496(5.2)	662(7.6)	1158(6.3)
Shoulder	1047(10.9)	761(8.7)	1808(9.9)
Chest	812(8.5)	506(5.8)	1318(7.2)
Abdomen	336(3.5)	113(1.3)	449(2.5)
Pelvis	623(6.5)	251(2.9)	874(4.8)
Right upper limb	1157(12.1)	1238(14.2)	2395(13.1)
Left upper limb	1128(11.8)	1271(14.5)	2399(13.1)
Right lower limb	687(7.2)	584(6.7)	1271(6.9)
Left lower limb	671(7.0)	629(7.2)	1300(7.1)
TOTAL	9567(52.3)	8737(47.7)	18304(100)

## DISCUSSION

The incidence of PVCA confirmed cases reported to the authorities increases every year<sup>11</sup>. For PVCA prevention, it is crucial to establish common parameters based on epidemiological information and scientific data. The availability of reliable information is an initial stage to develop or suggest changes to existing protection programmes<sup>13</sup>.

PVCA is a real problem in today's society and reaches across different cultural, socio-economic, ethnic, and social groups. In Brazil, despite the increasing social awareness, the biggest challenge is still the full knowledge of this problem<sup>14</sup>.

This study explores a series of reports of PVCA, aged 0–18 living in Refice, Brazil, recorded by the IMLAPC between 2009 and 2013.

It was noted that the prevalence of PVCA cases has had a very mild decrease, despite the slight increase observed in 2010, suggesting that the institutions connected to the PVCA have reported a similar number of cases, indicating that preventive measures are needed.

Males were more frequent victims, fact corroborated by several authors that state that temper and social exposure may explain these differences.<sup>15,20</sup> Moreover, in our study, victims were mainly male because a large number of cases involved assault by police officers, resulting from interventions and arrests, and young law offenders are, more frequently, male.<sup>21</sup> We acknowledge that some particular kinds of violence are female-orientated (e.g. sex crimes), but in physical violence, such a trend does not appear to exist.<sup>15,16</sup> The fact that our study concerned PVCA regardless of the context may explain our results.

The age of the children and adolescents' victims of PVCA grew in direct relation to the number of occurrences. Research has shown that rates of violence begin to increase in pre-adolescence or early adolescence.<sup>19,22</sup> Children are more dependent on their parents, while adolescents have greater autonomy and are more exposed to violence.<sup>23</sup>

In our study, victims' acquaintances were the most common offenders, followed by police officers. Our data agrees with other researchers. For instance, Souto et al. stated that in PVCA, regarding the offender, the highest frequency of reports involved friends.<sup>24</sup> It is admissible that after a violent event the involved, if friends in the

past, call themselves acquaintances after the event.

Police officers were the most frequent offender of male victims, which may reflect temper and social exposure, for sex differences.<sup>15,17,20</sup>

Public places were the most common locations, representing 52.4% of the total number of occurrences, while the home environment was recorded as the second most common place. Mascarenhas et al. referred the home environment as the place where much of the violent events take place because, by staying longer in their homes, children end up being more often abused in these sites<sup>25</sup>. Yet, in this study only children younger than 10 years of age were involved, which may explain why the home environment was the most common place. In fact, recent research has shown that the largest number of aggressions in children under 12 years occurred at home and in adolescents above 13 years of age at public places.<sup>11, 22 26,27</sup>

Furthermore, it has been pointed out the public spaces (streets, and other public places) as important scenario for the occurrence of violent events involving males, while the majority of the violence against girls happened at home.<sup>28</sup> Our sample concerned mostly males, which can explain our results.

By seeking health care after physical aggression, victims have the documentary evidence of an assault, medical care being valuable proof. In our study, the percentage of PVCA victims who sought medical care was extremely low, in spite of the ease of access to health care provided by the Family Health Care program that provides one or more health units for each neighbourhood of the city.<sup>29</sup>

When a victim makes a complaint of aggression it is important to know if it was a first-time occurrence, as previous cases may draw attention to a continuous pattern of aggression by a perpetrator close to the victim.<sup>16</sup> Yet, it has been stated that in cases of domestic violence, usually there is no formal complaint<sup>30</sup>; furthermore, these cases are not reported because close parents, relatives or acquaintances, make it difficult for victims to report such violence.<sup>31</sup>

Our data concerning injuries agrees with that from previous reports, which state that the head (skull and face) and neck region were commonly affected by attacks.<sup>15,20,32-34</sup> Brink (2009)<sup>32</sup> estimates that 85% of acts of physical aggression against children affect the face, head, and neck.

Darche et al.<sup>33</sup> report a 78% prevalence rate of injuries involving the face and skull. According to Carvalho et al.,<sup>34</sup> Valente et al.,<sup>15</sup> and Cavalcanti<sup>35</sup> the face is the most exposed and the least protected part of the body and the region most associated with a variety of injuries. In our study, the face was the most affected area (20.1%). The face is most commonly struck due to the process of subjugation and humiliation inherent in the character of aggression while injuries to the arms, the second most frequent site of injury, are associated with the victims' attempts to defend themselves from acts of aggression.<sup>32</sup> Dentists in their daily activity, play an important role in detecting violence, as injuries resulting from aggressions often reach their area of expertise (head, face and neck), these professionals are strategically placed to identify and report these cases.<sup>33</sup>

Some limitations can be expected due to problems of under reporting or data categorization. It would be useful to know in detail the type of face injuries involved, and eventually link them to a specific context, as it would be a valuable tool for differential diagnosis.

Yet, the reports did not have that information, pointing out the need of having professionals with dental expertise to perform these examinations.

## CONCLUSION

This 5-year study of PVCA reported in Recife, Brazil, from 2009 to 2014 showed that the majority of victims were males, and acquaintances were the main identified aggressors. Events took place mainly in public places and the body region most commonly was the face. The data points out the need to target public places as an arena for preventive and protective measures. Furthermore, it was a recognizable limitation of this study the lack of suitable information considering face injuries. Nonetheless, it is quite clear that policies towards PVCA prevention, diagnose and reporting must include dental professionals.

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