Acta Scientific Neurology

Volume 2 Issue 5 May 2019

Research Article

Characterization of Lesions of External Cause Associated with Violence in Young People between 14 to 26 Years in a Public Hospital of Third Level of the City of Cali between Years 2012 to 2014

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Received: March 15, 2019; **Published:** April 02, 2019

Abstract

Introduction: Youth violence has been classified as a global public health problem due to its high incidence, high costs to the health system and to society in terms of years of lost life. From the year 2012 a public policy is implemented to reduce the rates of juvenile violence, of which the effects have not been evaluated from the order of the health care.

Objective: To describe the characteristics of juvenile violence in the period 2012-2014 in a pubic hospital of level I in Cali-Colombia after the public policies were implemented in that city.

Materials and Methods: Retrospective cohort study. From the International Registry of (ITR/SPT-ITSDP) Trauma of the university Hospital of the Valley, Is They included all consecutive patients between 14-26 years who entered with some externally-caused injury associated with violence.

Results: Of the international registration, and L 32% (7715/24084) were reported as a secondary injury to trauma between 14-26 years, and of these 37.33% (2880/7715) More frequently cases were presented between 14-18 years in the year 2012 and for the years 2013 and 2014, in the group of 19 to 22 years. The main type of trauma was the penetrating (81.2%) Per firearm (54.1%), followed by stab wounds (25.2%). In 17.9% was found concomitant alcohol consumption, and 29.8% with use of psychoactive substances. The rate of juvenile violence showed significant changes of 55.7% in 2012 to 37.8% in the 2014, $p < 0.0001$) and that has an impact on the decrease in the overall mortality rate of 7.4% to 3.3%, $p = 0.0349$ respectively.

Conclusions: In the population between 14-26 years trauma injuries between the years 2012-2014 showed a significant decrease in the annual incidence ($P < 0.0001$) and decrease in the rate of global mortality. The observed trend may seem to reflect the impact of the implementation of public policy.

Keywords: Violence; Young People; Hospital

Introduction

The World Health Organization defines violence as "the deliberate use of physical force or power, whether in the degree of threat or effective, against oneself, another person or a group or community, which causes or is likely to cause injury, death, psychological damage, developmental disorders or deprivation" [1]. It is also considered as juvenile violence when it is perpetuated in the age group of young people and adolescents, that is to say, in the population that is between 10 and 24 years old [2]. Violence has always been a part of human experience; However, in recent decades its impact has been so important that in 1996 it was declared, by the World Health Assembly, as a public health problem [3]. Juvenile violence is within the group of community interpersonal violence and for the purposes of this work, juvenile violence of a physical na-

ture, both fatal and not fatal, will be worked out due That is where the highest figures are, as well as the biggest losses to the system.

Each year, according to WHO figures, more than 1.4 million people lose their lives due to violence, and of this figure, about 200000 deaths occur from homicide in people between 10 and 29 years (daily die 565 young people because of Interpersonal violence) [4] So homicide is constituted as the fourth cause of dying World-Class Youth [5].

Due to the importance of this phenomenon, multiple studies have been carried out that have identified as factors of risk being man, low socioeconomic strata, consumption of cigarette and SPA, low self-esteem, low schooling among others [6]. However, according to the report on the situation of the global prevention of Violence 2014, it states that less than half of the countries surveyed collect information about youth violence (only 26% of the 133 countries surveyed), but it is found that 53% of the participating countries have national action plans to prevent and treat youth violence, suggesting that much of the planning and setting of standards It is carried out without data [7].

Added to the problem of lack of data for the implementation of appropriate strategies, it is found that juvenile violence not only provides high rates of mortality and immediate human and social cost, but also high economic losses to the system, which Can be evidenced by reviewing the lost healthy years of life indicators [7] in Colombia, for the year 2014 were found a potentially lost years of life corresponding to 900,878 years, and a loss of 371,142 healthy years of life for non-fatal injuries, figures given for the most part by injuries within the juvenile population. For Latin America, by estimating the cost of opportunity for homicides in the region, the detriment to ex-capital of approximately 27.737 Million dollars per year [8], then losing about 14% of the gross domestic product for violence. Data from the region are taken into account due to the lack of more national data.

Thus, the characterization of the behavior of the violence that occurs in the young population, as well as the injuries that this produces, are constituted as valuable and important data, since they provide solid bases that describe the patterns of the different Modifiable variables through various strategies to control the rates of juvenile violence. Through this work we intend to evaluate the trend of interpersonal youth violence in recent years in the city of Cali, and establish possible Inferences about the effectiveness of public policies aimed at this population that have been implemented for the period of time to study.

Materials and Methods

- **Design:** It is a descriptive study, retrospective cohort type that from the international Trauma Registry of the Pan American Trauma Society through the International Trauma Systems Program (ITR/SPT-ITSDP) installed at the university Hospital of the Valley" Evaristo García "E.S.E. All records of young people aged 16-24 years with external cause injury were used in the period January 2012 to December 2014, the study was approved by the Ethics Committee on Institutional Research. The registry methodology was previously described [9].
- **Site:** The hospital corresponds to one of public first level of attention and an important hospital of reference in the Colombian Southwest, characterized by the management of the high complexity, of academic affiliation to the programs of health of the University of Valle with international recognition [9].
- **Definition of juvenile violence:** The World Health Organization defines juvenile violence as a series of acts ranging from intimidation and bickering to homicide, to more serious sexual and physical aggression, and perpetuated in the age group between the ages of 10 and 29 [10].
- **Statistical analysis:** Data is exported to a database in a binary file, the analysis is performed in the Stata TM 12® Statistical software (StataCorp, College Station, Texas, USA).

The categorical variables are presented in proportions and for the comparison of variables the chi-square test, for continuous variables were estimated medium and medium with their respective dispersion measures (standard deviation and percentiles 25 and 75), for the compared the T-test was used for the Student Or Wilcoxon's test according to their normal distribution. The age group of 14-26 years is stratified in 3 Categories Because their behavior is different: from 14-18; of 19-21 and 22-26 years. Incidences and unadjusted annual rates for mortality were estimated. Statistically significant $p < 0.05$ was considered.

Results

During the period 2012-2014 entered the university Hospital del Valle, a total of 24,084 patients, XXX% were men. Injuries between 14 and 26 years of age in youth corresponded to 7,715 (32%). Of these, 2880/7715 (29.5%) They corresponded to cases of juvenile violence, which was presented in greater proportion in the age range of 19 to 22 years, with an average age of 20.3 ± 3.2 years. In general the type of trauma most frequently corresponded to the secondary to penetrating wounds, with 81.2% (2338/7715), and the most prevalent mechanism was the firearm, which represented the 54,1% (1559/2338) (see table 1).

Clinical presentation of trauma

As for the type of trauma, the highest proportion corresponds to the penetrating trauma (81.2%, n = 2338), and related to the primary mechanism, the firearm is positioned with more than half of the cases (54.1%) (table 2).

Feature	Frequency
Age Average ± of*	20,3 ± 3,2
Age, Categories, N,%	993 (34.4)
14-18	1057 (36.7)
19-21	830 (28.9)
22-26	
Type of trauma, N, (%)	
Bruised	525, (18.2)
Other specified	17, (0.6)
Mechanism, n, (%)	
Firearm	1559, (54.1)
White weapon	727, (25.2)
Aggression	396, (13.8)
ISS to Income, median (RIQ * *)	4 (1-9)
Glasgow to Income, N, (%)	
3-8	348, (12.1)
9-13	110, (3.8)
14-15	2360, (81.9)
Global mortality rate	5,3%
Intentional mortality rate	13,2%

Table 1: Distribution of lesions of external cause according to the mechanism, type and severity of the trauma between 2012-2014.

* FROM: standard deviation; * * RIQ: Interquartile Range

	General	2012	2013	2014	Value of P
Age, Categories, n, (%)					
14 a 18	993	448, (45.1)	276	269	
19 a 22	1057	424	323	310	
23 a 26	830	328	264	238	
Incidence					
Juvenile Trauma, N, %	7715	2155	2272	3288	
Trauma from violence	2880	1200	863	817	0.0001
Annual violence mortality					
Rate	379	Only 12.3%	135	97	
General mortality rate	412	7.4%	145	108	
	0,1316				

Table 2: Incidence of trauma according to age groups and unadjusted mortality rates. Period 2012-2014. Source: Registration ITR/SPT-ITSDP.

The severity of the state hemodynamic to the patient's admission, was obtained with the Glasgow coma Scale, The majority Of the injured enter with a good level of consciousness Glasgow 14-15:81.9%. Of all cases of juvenile violence, Concurrently It was reported with consumption of psychoactive substances, it was obtained that the higher proportion was marijuana. In the same way, the largest number of consumers was found in the range between 19 and 22 years. This situation was more frequent with SPA consumption, and use of firearm, followed by the white weapon.

Incidence and mortality

The period of youth was divided into 3 age groups: 14-18 years, 19-22 years and 23-26 years. Of the population studied 34.4% of the cases (n = 993), belonged to the first interval, 36.7% (n = 1057) to the second interval and 28.8% (n = 830) to the third. Of the totality of cases according to the ages, the greatest incidence was found, for the three ranges of ages, during the year 2012 (table 2).

In conducting the analysis for the years studied, there is evidence that there is a decrease in the incidence of juvenile violence ($p < 0.0001$). Thus, for 2012 of all juvenile trauma, 55.7% (n = 1200) was considered juvenile violence. During this period 37.3% of the cases were presented in the ages between 14 and 18 years, followed by the ages 19 to 22 years (35.3%, n = 424) and finally the period of 23 to 26 years (39.5%, n = 328). The year 2013 showed a decrease of 337 cases in juvenile violence; The highest incidence is obtained for the range of 19 to 22 years (37.4%) And the behavior of the lowest incidence in the range of 23 to 26 years (30.5%) is maintained. The 2014 continues with the decrease of the incidence, obtaining a total of 24.8%. The highest percentage of cases occurs in the group of 19 to 22 years (37.9%), and the lowest percentage corresponds to the group of 23-26 years (29.1%), preserving the trend for this last interval.

Finally, despite the fact that juvenile trauma increased during the study period, overall mortality showed a decline.

Trauma from violence also showed a statistically significant decrease Values of 7.7%, XXX% and 3.3% ($P < 0.0001$), which is also reflected in the reduction of intentionality mortality ($P = 0.0349$) Respectively for the years 2012, 2013 and 2014.

Discussion

In the population between 14-26 years trauma injuries between the years 2012-2014 showed a significant decrease in the annual incidence; From 55.7% in the year 2012 to 24.8% in the year 2014 ($p < 0.0001$) and with impact on the decrease in overall mortality (from 7.4% to 3.3%, $p = 0.0349$).

This trend is just presented when public policy is implemented in the city in the year 2012. Youth violence, like all epidemics in public health, has a risk factor that is important to consider when measuring the vulnerability of a population. Thus, who has ruled a number of conditions that make a young person more prone to juvenile violence, including male gender, SPA consumption, smoking, low socioeconomic strata, among others. To the analysis of the risk factors of the studied population, of which were managed to measure the consumption of SPA, the smoking, and indirectly the socioeconomic stratum by means of the determination of the social

security system, it was found that there is a Important association between mentioned risk factors and juvenile violence.

Similarly, by comparing the behavior of juvenile violence in Santiago de Cali with that documented for Latin America, figures are quite above the Esper ADO, they put Colombia com Or as one of The most violent countries in Latin America. However, by comparing Colombia with countries like Brazil, where the rate of juvenile homicide amounts to 16.3 per 100mil inhabitants in the year 2013, It is evident that it is a more violent country at the level of the youth than ours [13]. Despite the fact that there is a decrease in the incidence of juvenile violence as well as Intentional mortality during the 3 years analyzed, the figures continue to be found above the national and departmental average. When comparing the results obtained with the national data provided by the FORENSIS study, it is possible to show that while at the national level the incidence had an increase and subsequently a decrease, in Cali the behavior of reduction of cases was Maintained in the 3 years, but with always elevated figures. However, behavior in relation to the intentionality and trauma mechanism, is similar to that reported, since they are highlighted in both cases as main mechanisms and types of trauma, those associated with quarrels and fights. However, in this study it was found in the first place the penetrating trauma and the firearms, and the national report establishes the trauma and blunt objects, situation that would suggest a great number of factors in relation to the obtaining and availability of weapons of Fire and white weapons within young people and teenagers Cali.

On the other hand when analyzing the behavior according to the age groups, it is observed that there is a behavior very similar to the expected, since the greatest incidence was found is presented for the interval between 19 and 22 years, as reported by the study FORENSIS, with the exception of the year 2012, where this study found a greater incidence in the group of 14 to 18 years.

According to the data provided by the Santiago de Cali's status in its report of 2014, it coincides with the main association with quarrels, and the highest incidence in the age group 19-22 years, which are repeated in our city. It is important to highlight, that the decrease in cases of juvenile violence, starts from the year 2012, one year after the implementation of the Local youth Plan, regulated by the decree 945 of the mayor of Santiago de Cali, in the year 2006. In analyzing mortality figures, behavior is observed in accordance with the behavior of the incidence of juvenile violence, a pattern of decline for the 3 years, figures that match the decrease in the national average. It is to be emphasized that the national figures of the years assessed always show the greatest number of cases in the range of 20 to 24 years, however in this study was not determined mortality according to age ranges. According to all of the above, it can be inferred that the implementation of the local youth plan has had a positive impact on the population, since there has been a decrease in the indicators of violence, although a study was conducted in which They found great flaws in their implementation. However, even though the behavior is According to the national, the figures continue to be elevated, in relation to the rest of the Colombian and Latin American territory.

It should be emphasized that the issue of youth violence has also been addressed from the psychiatric behavioral aspect. A study carried out with two cohorts from different European cities followed for four years, showed that Yes there is a linear association between depression in young people and subsequent violent results, with a OR 2.1 (95% CI = 1.7-2.7) [11]. Another study comparing a population of young Chinese men with a United Kingdom cohort showed that the incidence of violence in the Chinese is lower than in the British (AOR 0.59, 95% CI 0.48-0.72, P < 0.001), situation that the authors associated with a higher incidence of antisocial personality disorder and substance abuse [12]. Thus, it is taken into account that the psychiatric and cultural factors could also have a great influence on the juvenile violence, constituting then like a bias of this study, since within the register used for the data collection, it is not They include information on psychiatric evaluations.

Conclusion

In the population between 14-26 years trauma injuries between the years 2012-2014 showed a significant decrease in the annual incidence (P < 0.0001) and decrease in the rate of global mortality. Apparently, the observed trend may reflect the impact of the implementation of public policy.

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