

(RESEARCH ARTICLE)



Cases of homicide in Senegal in medicolegal autopsies during the period from 2017 to 2021

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International Journal of Scholarly Research in Multidisciplinary Studies, 2024, 04(01), 013–019

Publication history: Received on 07 February 2024; revised on 18 March 2024; accepted on 21 March 2024

Article DOI: <https://doi.org/10.56781/ijrms.2024.4.1.0026>

Abstract

Introduction: In case of death by homicide or suspicious death, unidentified deceased bodies, a judicial procedure is opened and a requisition for an autopsy is systematically requested from the medical examiner, whose purpose is to identify the causes and circumstances of death.

The objective of this study is to determine the epidemiological and medico-legal aspects of violent deaths by homicides involving a medico-legal obstacle in Senegal.

Methodology: Our study was carried out in public hospital structures in Senegal. This is a retrospective study based on data collected in judicial requisitions, autopsy reports and in registers from January 2017 to December 2021. It concerned all cases of death that have benefited from a forensic autopsy following a judicial requisition.

Results: During the study period, violent deaths constituted the most represented forensic form with 53.4% of autopsies performed, ahead of natural deaths with 42.4%. The average age of the deceased subjects was 37 years with a male predominance in 242 cases (78%). The place of death or discovery of the corpse was in Rural Dakar. Violent deaths by homicides accounted for 12.5% of cases. Thus, in the cases of homicides, intentional assault and wounding by a knife were in the foreground with 71.2% followed by infanticide 15%.

Conclusion: Homicide deaths are violent deaths that represent a public health problem due to unemployment, poverty and economic crises.

Thus, the information collected from forensic sources provides information about the victims, the causes and circumstances of death. Improving the collection of data on the perpetrators of homicides requires detailed databases on homicides during investigations and after judicial sanctions, to have a more complete overview of homicide profiles and homicide prevention strategies at national level.

Keywords: Homicides; Forensic autopsies; Violent death; Murderer

1 Introduction

Cases of death by homicide are investigated for to determine the cause of death and the mechanisms involved. Homicide is, therefore, probably the best measured offense and constitutes, in the eyes of many researchers, a good indicator of the level of general violence in a society [1,2].

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In the event of death by homicide or suspicious death, of unidentified deceased bodies, legal proceedings are opened and a requisition for an autopsy is systematically requested from the forensic doctor, the aim of which is to identify the causes and circumstances of death. Data on medical causes of death thus make it possible to understand the extent of certain public health problems at the national level: the frequency of morbid or violent deaths, changes over time, spatial and sociodemographic differences. Violent deaths in industrialized countries show high suicide rates and this has been identified as a serious public health problem by the World Health Organization [3] as opposed to developing countries where suicide rates are low [4,5].

We do not have a national study of violent death cases to evaluate and determine the epidemiological and medico-legal characteristics of homicide cases in the population.

This epidemiological information is also important for international comparisons.

The objective of this study is to determine the epidemiological and medico-legal aspects of violent deaths by homicide involving a medico-legal obstacle in Senegal.

2 Material and methods

Our study was carried out in the following hospital structures: the Aristide Le Dantec Public Health Establishment (EPS) in Dakar, the Idrissa Pouye General Hospital in Grand Yoff and in the Public Hospital establishments of Ziguinchor, Kédougou.... This is a retrospective study based on data that will be collected in court requisitions, autopsy reports and in the registers of the structures concerned by this study ranging from January 2017 to December 2021. It included all cases of death having benefited from a medico-legal autopsy following a judicial requisition. We have excluded from this study scientific autopsies and autopsies whose bodies were discovered in a state of advanced putrefaction. The collection of elements will be carried out for each autopsy, on the basis of a file including epidemiological data and medical aspects. -legal: epidemiological data (age, sex, place of death, period of accident) and medico-legal data (circumstances of death or manner of death, cause of death or type of death) Data analysis was done using Microsoft Excel 2007 software and Word 2016. The quantitative variables were described by their average, maximum and minimum while the qualitative variables by their number and percentage.

3 Results

3.1 Statistical data

Over the study period, violent deaths constituted the most represented medico-legal form with 53.4% of autopsies performed, ahead of natural deaths with 42.4% and finally lower undetermined deaths. with 4.2% of cases. In violent deaths the majority of cases were the result of accidents 84% followed by homicides 12.5% and in last position suicide which was uncommon with 3.5%

3.2 Epidemiological data

3.2.1 Age

The average age of deceased subjects was 37 years with extremes ranging from 0 to 82 years. The age groups most affected were those 20-29 years old, 30-39 years old, 40-49 years old with 17%, 16% and 15% respectively.

3.2.2 Sex

Deaths were predominantly male with 242 cases (78%) with a sex ratio of 3.4.

3.2.3 Nationality

All deaths were of Senegalese nationality with 100% of cases.

3.2.4 Location

The place of death or discovery of the corpse was in Dakar Rural (the suburbs of Dakar and its surroundings) in the majority of cases, i.e. 74%, followed by Dakar Urban or Dakar center at 26%.

3.2.5 Period of the accident

All months were affected by deaths, with a slight peak for the month of September with 13%.

3.3 Medico-legal data

Violent deaths were in the majority of cases following accidents 84% followed by homicides 12.5% and in last place suicide which was uncommon with 3.5%. As for violent deaths by homicide, intentional injuries by stabbing were at the forefront with 71.2% followed by infanticide 15%.

Table 1 Distribution according to types of violent deaths

	Violent deaths		Absolute Frequency	Relative Frequency
		Road accident	1165	46.7%
Accident		Fall	177	7.1%
		Domestic accident	62	2.5%
	Trauma	Work accident	61	2.4%
		Sea accident	16	0.6%
		Others: railway accident, sports accident, explosion	8	0.3%
		Drowning	355	14.2%
		Thoracic compression	49	2.0%
	Asphyxia	Gas inhalation	28	1.1%
		Suffocation	15	0.6%
		Strangulation	5	0.2%
		Thermal burns	78	3.1%
	Burns	electric burns	61	2.4%
	Poisoning	Intoxication	13	0.5%
		Hanging	79	3.2%
		Ingestion of caustic product	3	0.1%
Homicide		Falling	2	0.1%
		White weapon	2	0.1%
		Others: Suffocation, Firearm, burn	3	0.1%
		Intentional strikes and injuries by white weapons	223	8.9%
		Infanticide	47	1.9%

		Intentional strikes and injuries by firearm	17	0.7%
Homicide		Strangulation	11	0.4%
		Medical accident	6	0.2%
		Intentional strikes and injuries by blunt object	5	0.2%
		Others: : RAPE,, FRATRICIDE	4	0.2%
		Total workforce	2495	100%

4 Discussion

The limitations of our study are linked to the retrospective nature of the study with the absence of certain information on cases of death in the exploitation of hospital registers of mortuary services representative of the country. The information mainly concerns the victims, but that of the perpetrators is not known.

4.1 Statistical data

The limitations of our study are linked to the retrospective nature of the study with the absence of certain information on cases of death in the exploitation of hospital registers of mortuary services representative of the country. Also some causes of death were undetermined and some autopsies were impossible to perform due to advanced decomposition of bodies. The information mainly concerns the victims but that of the perpetrators of the offense is not known. On the other hand, the judicial source does not provide us with any context or information on the authors. It is also important to note that this database only lists information on homicide cases in mortuary locations. Thus, this medico-legal source only provides information on the victims, above all it made it possible to precisely identify the causes of death (use of weapon or not and if so, what type of weapon caused the death). death) and to see if these causes have changed over the years [6].

4.2 Epidemiological data

4.2.1 Age

The distribution of victims presents two peaks, one concerns the 20-29 age group and the other that of 30-39 years. Other research [7,8,9] on various determinants has shown that the majority of victims are young. These age groups are more prone to fatal accidents because they are the most mobile and dynamic of all other age groups due to training, employment in the modern and informal sectors, unemployment, poverty, economic crises, drug abuse, banditry and other financial responsibilities.

4.2.2 Sex - nationality

The profile of the victims shows a high proportion of males (79%) and all of them are Senegalese (100%). This male predominance was also noted by studies carried out by Soumah [10] in Dakar 86%, Ebouat [11]. in Ivory Coast 87%, Enow-Orock [12] in Cameroon 69.8% and Larsen[13] in Denmark 68%. This contextual situation is largely due to the fact that men have more responsibilities within the family due to their socio-economic situations. Thus, men are more exposed to road traffic accidents, assaults and all other types of violence. Young men are also inclined to adopt risky behaviors, taking narcotics and drugs. These findings are of great concern as younger-aged men are major contributors to the country's economy and are generally breadwinners.

4.2.3 Location

The place of death or discovery of the corpse is located in rural Dakar (the suburbs of Dakar and its surroundings) in the majority of cases, i.e. 53%, followed by Dakar Urban or Dakar center at 33%. Our study shows that the majority of cases of homicides and physical attacks occur in rural areas. EBOUAT studies in Ivory Coast [11]. and NGONGANG in Cameroon[14]. find a predominance of delinquency in the streets of developing countries, especially in rural areas. We are confronted in rural areas with the growing presence of insecurity favored by a demographic explosion and endemic youth unemployment in the suburbs, the free circulation of bladed weapons, the abusive use of drugs and alcohol by young people, police and gendarmerie services are almost non-existent in the rural area. Thus, these different situations favor and accentuate the occurrence of fatal accidents, in this case the crime rate in rural areas.

4.2.4 *Period of the accident:*

In our study, all months were affected by death with slight peaks in September and August with 13% and 10% respectively. These months correspond to long school holiday activities, the heat period (summer). Added to this in our context are religious events with a monthly variation leading to a massive movement of people. These religious events attract many pilgrims from several countries and localities, leading to numerous physical attacks.

4.3 Forensic data

Homicide comes second in our study with a mortality rate of 12.5% compared to other deaths. Our study shows a predominance of intentional stab wounds with 71% of homicides followed by infanticide with a rate of 15%. YEBOUET's study [15] found identical factors. In fact, intentional stabbing and stabbing were the prerogative of fights and physical attacks. According to the UN, this difference could be explained by the existence of certain factors favoring crime and which are more observed in Africa: this involves high income inequality, rapid urbanization, a high proportion unemployed youth and insufficient resources in the criminal justice system[49]. Like certain European studies [16,17,18], stab wounds were the most commonly used method in homicides.

On the other hand, in the European context, firearms predominate and refer more to a violent lifestyle than to self-defense [19].

This violent lifestyle can also be highlighted by the indicator measuring the level of drug trafficking in a country. Several authors had highlighted the link between drug trafficking and homicides. This link was explained by the violent lifestyle generated by significant drug trafficking, whether local or international [20, 21]. In a study by Cotter [22] in Canada, firearm homicides accounted for 40% of all homicides in 2021, making the discharge of a firearm the leading cause of death among homicide victims ; This was followed by stabbing attacks (32%). These proportions have been relatively stable since 2016; The discharge of a firearm has been the most common cause of death every year for the past six years. But before that, from 1985 to 2015, the most common cause of death in Canada alternated between the discharge of a firearm and stabbing.

In our series, the thorax and the cervical region were the areas most frequently targeted by the attackers. According to other series, stab wounds mainly concerned the same regions [17, 23] due to the very visible position of the head on the body and stab wounds could lead to death with the involvement of large vessels. However, as in other studies [4, 16] the chest wounds identified in our study were fatal in all cases, especially the cardiac wounds. In our series, the thorax was the region most targeted by the attackers. According to other series, stab wounds mainly affected the head and neck region. [17, 23] due to the very visible position that the head occupies on the body and whose impairment can lead to death or significant aesthetic damage. However, like other studies [4, 16], the chest wounds found in our study were fatal in all cases with a predilection for the heart.

The second cause of these homicides is infanticide often caused by young women. Doumbia's study specifies that family homicides represent the type of murder most committed by women (38.5%), mainly due to infanticide. The putative perpetrators of family homicides belong to the disadvantaged classes of society: 22% are farmers, 19% work in small jobs in the informal sector and 26% are housewives. The suspects are young adults: 70% are between 18 and 40 years old. Worldwide, nearly 464,000 people were victims of deadly violence in 2017, more than five times the number of people killed in armed conflicts during the same period, according to United Nations researchers. The United Nations Office on Drugs and Crime (UNODC) study indicates that Central America is the most dangerous region to live in, with the number of homicides – or unlawful killings – increasing in certain “hot spots”, reaching 62.1 per 100,000 people. This study specifies that the homicide rate in Africa was lower than that of the Americas, which had the highest percentage in 2017[23].

In our context, these are women who become pregnant outside of marriage, and who kill their babies out of fear and/or shame. Other factors such as rape, incest, forced marriages, poverty, adultery of certain emigrant wives, ignorance or neglect of contraceptive methods.

However, the homicide rate in Senegal is among the lowest in Africa (3 per 100,000 inhabitants) [24].

Faced with this growing crime, it is urgent for the authorities to fight against the increase in insecurity and the impunity of criminals. At the same time, tackling rampant youth unemployment and improving the socio-economic conditions of the population.

5 Conclusion

Criminal deaths, whatever the means used, are by definition violent deaths which constitute a public health problem. The crime rate has been increasing in recent years, in proportion to that of unemployment, poverty and economic crises.

Information collected by medicolegal sources provides information on the victims, the causes and circumstances of death. To improve the collection of information on the perpetrators of homicides, it is necessary to have detailed databases on homicides in requisitions (police source) and after judicial sanctions (judicial source). This will make it possible to have a more global vision of the profiles of the perpetrators of homicides and to implement prevention strategies against homicides.

Compliance with ethical standards

Statement of informed consent

The authors declare that there is no conflict of interest

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