

Non-fatal gunshot wounds among military police in Rio de Janeiro: health as a field of emergency against the naturalization of violence

Adriane Batista Pires Maia (<https://orcid.org/0000-0001-6081-707X>)¹
Simone Gonçalves Assis (<http://orcid.org/0000-0001-5460-6153>)¹
Fernanda Mendes Lages Ribeiro (<https://orcid.org/0000-0002-3766-9758>)¹
Liana Wernersbach (<https://orcid.org/0000-0003-1928-9265>)¹

Abstract *This article discusses health problems due to firearm injuries suffered on duty military police officers in the metropolitan region of Rio de Janeiro (RJ). Medical records analysis was conducted referring to military police officers who were treated at the Military Police's Central Hospital (MPCH) due to gunshot wounds from June 2015 to December 2017 according to professional profile, the characteristics of the event and the location, the spatial distribution of the incidents involving gunshot wounds, and the healthcare units involved in their care. Firearms injured four hundred seventy-five military police officers: 98.3% were male, 77.3% were in service, 97.9% were soldier personnel. As to the anatomical location of the wounds, the most affected regions were: lower (41.1%) and superior (33.1%) limbs, the head neck-face region (23.5%), and thorax-abdomen (3%). The areas in the metropolitan area of Rio de Janeiro with the highest occurrence of firearm morbidity are program areas 3 and 1 and the Baixada Fluminense. There is a correlation between police morbidity rates due to firearm injuries in the municipalities of the metropolitan region and demographic density ($p = 0.024$).*

Key words *Morbidity, Police, Public safety, Gunshot wound, Occupational health*

¹ Departamento Estudos de Violência e Saúde Jorge Careli, Escola Nacional de Saúde Pública Sergio Arouca, Fundação Oswaldo Cruz. Rua Leopoldo Bulhões 1480, Manguinhos. 21041-210 Rio de Janeiro RJ Brasil. adrianepmaia@gmail.com

Introduction

Brazil is a country marked by violence. However, in the social imagination, there is the myth that we are a peaceful country¹. Despite the resumption of civil rights and the restoration of a democratic state of rights in the past 35 years, social violence remains high and even increasing in the wake of globalization and urbanization. Although we do not experience armed conflicts of a religious, ethnic, territorial, or political nature, between 1980 and 2014, 967,851 people died due to gunshot wounds (GW), which places us among the ten countries with the highest rate of firearm homicide in the world. Among the fatal victims of firearms, there is a majority profile of men between 15 and 29 years of age and blacks. Victimization by firearms among the black population is 2.6 times greater than among whites²⁻⁴. Phebo⁵ concluded that among deaths from external causes, those caused by firearms exceeded those caused by traffic accidents, becoming the first cause among homicides, generating an additional impact on the cost of hospitalizations in the accredited network of the Unified Health System (SUS).

This type of social violence has also affected officers in the country. Rio de Janeiro was the state that had the highest absolute number of police officers killed in 2016⁶. However, the numbers of firearm morbidities among this class of workers are not known, making it difficult to understand the real magnitude of this problem. Ekhamenor and Ojo⁷ concluded that injuries among security professionals differ from the characteristics found in civil practice, both from an epidemiological point of view and in the treatment.

In a systematic review survey of public security professionals affected by gunshot wounds, it was found that this lethal object was the main injury mechanism in service among police officers, more frequent among male security professionals, with about 31 years of age. The circumstances of most significant risk were: arrest actions in response to demands for verification of disturbance to the order and situations of war⁸.

In Brazil, the escalation of this type of injury occurs due to the illegal penetration of weapons with a high potential for destruction, affecting not only the civilian population but also public security professionals, becoming a public health problem². Despite this, few studies investigate and describe the location of these injuries, the impacts on the professional's performance, and

the police's health and social life^{1,9}, since there is no integrated national system in Brazil that registers the morbidity and mortality of public security agents⁹⁻¹¹.

Currently, reports on mortality among public security professionals in Brazil, when they exist, are fragmented and incomplete, gathering data provided by some Security Institutes or Public Security State Secretaries. In the State of Rio de Janeiro, the latest Police Victimization Report was published in 2015; however, it did not address the morbidities produced by firearms among these professionals¹².

The health care provided by military police officers in Rio de Janeiro has particularities that differ from other SUS users, as they have the possibility of adhering to a corporate health plan funded by financial resources raised from the voluntary contribution of the police professional (active and inactive), their dependents and pensioners, which make the Corporation's Health System work. The Central Hospital of the Military Police is currently the reference hospital for urgent and emergency care for military police officers and their dependents in the state of Rio de Janeiro.

This study aims to identify the profile and health care of military police officers in the state of Rio de Janeiro affected by non-fatal firearm injuries treated at the Military Police's Central Hospital.

Method

A survey was carried out regarding the military police who were attended at the MPCH due to GW, defined as any type of non-fatal physical injury by firearms, regardless of the severity of the injury caused. Describes the frequency and distribution of firearm attacks in the universe of police officers in the metropolitan region of Rio de Janeiro who did not die immediately due to the injury and who were taken to the hospital.

The search was carried out in the MPCH Firearms Injury Officers' Reports, covering from June 2015 to December 2017. The collection was made in the MPCH's Emergency Department (ED), which registers, since 2014, information about every police officer with GW. From July 2014 to May 2015 was excluded due to the lack of proper filing of records, which led to data loss. Information from medical records and Reports was accessed in 2018. Medical records are generated from the ED's Patient Entry Form.

Simultaneously, the Reports are fed by the day's officer, the military physician responsible for the emergency that releases in a brochure the information of each military wounded by firearm projectiles. This brochure is sent every two days to the MPCH secretariat, where a military police officer transcribes the information from the brochure to a form called "Report of Officers Served by Projectiles with Firearms." After filling out this notification form, it is filed with the secretary on paper and has never been digitized.

Variables were analyzed regarding: a) profile of the professionals: sex, police rank/graduation, and battalion; b) characteristics of the events and injuries: date and place of the occurrence, GW occurred on duty or day off, anatomical location, classification of the patient's health status in good, regular or severe, length of hospital stay, if he died or no during hospitalization, revictimization (yes or no) and the number of surgeries performed urgently at the MPCH due to the injury; c) the geographical distribution of GW: location of the event in the city of Rio de Janeiro, according to Planning Areas; for the Baixada Fluminense, Niterói and São Gonçalo region, the district involved was considered; and d) spatial distribution of the health services involved in the attendance: information on the hospitals involved in the primary care of the military police officers shot and identification of the metropolitan region of Rio de Janeiro where they were located.

The collected data were inserted into the EpiData 3.1 program and exported to the SPSS 20.0, in which simple, relative, and bivariate frequency distributions were developed for selected variables.

Aiming to analyze the temporal distribution of events, data were organized according to the month/year of occurrence, a graph was constructed to present the time series, and the percentage variation between months/years was calculated.

Aiming to identify some factors associated with police victimization by firearm, the police morbidity rate by firearm was calculated using the number of injured police officers (by the municipality and, in the case of Rio de Janeiro, also by planning area). As a denominator, it was used the police population in that area. As explanatory variables, the Municipal Human Development Index¹³, the percentage of the population living in subnormal agglomerates¹⁴, and the demographic density of the areas (IBGE, 2010) were used. Pearson's correlation coefficient was used for this analysis.

The research was submitted to and approved by the Research Ethics Committee of the National School of Public Health / Fiocruz.

Results

Four hundred seventy-five records of active military police attended at the MPCH emergence department due to GW were included. As for the profile of active military police officers served, 98.3% are male, with 8 cases of female police officers with gunshot wounds. Performing the temporal distribution of individuals who suffered GW, it is observed that between June and December 2015, 78 occurrences were found; in 2016, there were 172 occurrences; and in 2017, there was an increase in this type of violence, reaching 222 cases. There was no substantial difference between the months of the year. There was an increase in this morbidity between July 2015 and December 2017 (Table 1).

Among the 470 cases analyzed, in only five, it was not possible to identify whether the police officer was on duty or day off at the time of the injury, and these were excluded from the analysis. Among the 470 cases analyzed, we saw that a significant part of the visits made occurred in service (77,2%), resulting from work activity through the exercise of ostensive policing and police operations with armed confrontation in the city (349) and accidental shots (14). In 107 cases, military police officers were shot during their time off.

The distribution of police officers by rank shows that among the 472 injured, 251 are soldiers (53,3%). It was noted that, as the patent advances in the institutional hierarchy, there is less frequency of GW. Among the junior officers (a category that includes soldiers to second lieutenants) the majority of cases were found: 97,9% of the occurrences (Table 2). There are 46 junior officers for each officer affected by a gunshot wound in the State of Rio de Janeiro's metropolitan region.

Regarding the origin/location of the military police battalions (PMB) in which the police wounded by firearms worked, we found a higher occurrence of occupations in the units that carry out the Military Police's main activity (438 police officers injured) in comparison to the administrative units. (37 injured). Among those stationed in the Pacifying Police Units (PPUs), the most injured were found, in absolute numbers: 16th PMB PPU (49 injured), 3th PMB PP (33

Table 1. Temporal evolution of firearm injuries among military police officers in the Metropolitan Region of Rio de Janeiro - June 2015 to December 2017 (N = 472).

Month	Year			D%	D%
	2015	2016	2017	15-16	16-17
January	*	14	18	*	28,57
February	*	16	27	*	68,75
March	*	14	17	*	21,43
April	*	21	19	*	-9,52
May	*	16	26	*	62,50
June	12	20	24	66,67	20,00
July	11	9	14	-18,18	55,56
August	4	14	9	250,00	-35,71
September	13	11	20	-15,38	81,82
October	9	13	16	44,44	23,08
November	19	12	12	-36,84	0,00
December	10	12	20	20,00	66,67
Total	78	172	222	120,51	29,07
		D%		44,39	31,93
		média			

*data not available

Source: Central Hospital of the PMRJ

injured), both in the Planning Area (PA) 3; the 4th PMB UPP in PA 1 (34 injured); often follow police officers who work in the Battalion of Special Operations - BSO (32), noting that BSO operates in all areas of Rio de Janeiro. However, let us compare the number of wounded by firearms according to the total number of military police officers in each battalion. We see that, proportionally, BSO was the battalion with the highest proportion of police officers shot (6,6%), followed by the 18th MPB PPU, located in Cidade de Deus - PA 4 (4,6%). The remaining battalions range from 1% to 3,5% of professionals injured by firearms.

Among the 475 patients seen at the Emergency Department of the MPCH, 571 GWs were listed, distributed according to the anatomical location between upper and lower limbs, head-neck-face, and chest-abdomen (table 3), distributed in decreasing order of the affected regions: lower limbs (41,1%) and upper limbs (33,1%), head-neck-face region (23,5%) and chest-abdomen (17,3%).

Regarding the police officers' clinical status after being admitted to the MPCH emergency, among the 474 patients, 5,6% were classified as

Table 2. Distribution of the number of military police officers in the State of Rio de Janeiro's metropolitan region injured by firearms, according to patent.

Patents	Number of active MPs *	% of MPs according to patents	Frequency of shots	% of shots according to patents
Officers				
Colonel	105	0,2	-	-
Lieutenant Colonel	344	0,8	-	-
Major	836	1,9	2	0,4
Captain	1.050	2,3	3	0,6
1st Lieutenant	790	1,8	4	0,9
2st Lieutenant	222	0,5	1	0,2
Subtotal	3.347	7,5	10	2,1
Junior Officers				
Aspirant / Cadet	70	0,16	-	-
Lieutenant	4.484	10,1	19	4,0
1st Sergeant	2.420	5,4	13	2,8
2st Sergeant	8.011	18,0	53	11,2
3st Sergeant	5.040	11,3	49	10,3
Corporal	10.429	23,4	77	16,3
Soldier	10.737	24,1	251	53,3
Subtotal	41.191	92,5	462	97,9
Total MP	44.538	100,0	472	100,0

* Proportion of injured people assessed, according to the number of Military Polices (MPs)

Source: Ativa Personnel Department / Military Police of Rio de Janeiro - 2018.

severe, 90,9% in stable clinical condition, and 3,5% good. Of the 466 consultations, 78 patients (16,7%) needed to operate urgently at the MPCH. Among the policemen assisted, eight died during hospitalization (1,7%). Three cases (0,6%) of firearm revictimization occurred in the period evaluated. As for the length of hospital stay, a median of 0,0 days of hospital stay was found.

Concerning the spatial distribution of the places where the GWs occurred, a cut was made of the 475 cases surveyed, excluding from the sample 4 cases that occurred outside the metropolitan area of the city (Macaé and Cabo Frio), 26 cases in which it was not possible to identify the location of occurrence of the GW and 14 cases of accidents that occurred within the battalions during training or manipulation of the firearm (accidental firing). Thus, 431 military police officers were considered: 349 in the city of Rio de Janeiro, 70 in the Baixada Fluminense districts, 9 in Niterói, and 3 in São Gonçalo. In 51,2% of cases, the shootings took place in community regions and during police raids.

Discriminating the data for the municipality of Rio de Janeiro and its planning areas (PA), PA 3 (the most populated area and with the highest percentage of subnormal agglomerates) was the region with the highest frequency of morbidities due to firearms in absolute numbers (190) and also with the highest rate of police morbidity by firearms in the city. Of particular note are the districts of Penha (26 police officers injured), Complexo do Alemão (23), Mangueiras (16), Maré

(11), Lins de Vasconcelos (10), Jacarezinho (10), Barros Filho (6) and Méier (6). PA 1, located in the central region of the city, boasts the second-highest frequency of military police officers shot non-fatally in the city of Rio de Janeiro (73), mainly in the Center (16), Gamboa (15), Estácio (14) and Caju (7). In PA 2, 44 cases of military police officers were shot non-fatally, 25 of which occurred in favelas, especially Tijuca (14,9 in favelas), Copacabana (8, all in the Pavão-Pavãozinho community), Laranjeiras (6) and Vila Isabel (5). In PA 4, 25 cases were found, emphasizing the high frequency of shots in Cidade de Deus (19). PA 5 (higher in territorial extension and lower in the concentration of subnormal agglomerates) was the region with the lowest frequency of police officers shot non-fatally, with 17 cases, with Bangu (5) being the neighborhood with the highest percentage of occurrences (29,4%). Although there was a high correlation between police morbidity due to GW and the population living in subnormal agglomerations in the city of Rio de Janeiro, statistical significance was not reached ($p = 0.065$).

Considering the other municipalities in the metropolitan region, the Baixada Fluminense region stood out (70 police officers were shot): São João de Meriti accounted for the largest number of cases (18), followed by Duque de Caxias (17), Nova Iguaçu (10), Mesquita (6), Nilópolis (6), Belford Roxo (5), Magé (4), Itaguaí (2), Japeri (1) and Queimados (1). In the municipality of Niterói, 9 cases of military police officers were shot, followed by São Gonçalo, with 3 cases. São João de Meriti had the highest rate of police morbidity by firearms and São Gonçalo the lowest rate (Table 4). There was a correlation between the rates of police morbidity by firearms in the municipalities of the metropolitan region (except Rio de Janeiro) and demographic density ($p = 0,024$).

Among the hospitals that performed the first service of police officers with GW in the metropolitan region of the city, those belonging to the SUS network represented 58% of the services, followed by MPCH, with 165 (34,7%) attendances, the Emergency Care Units (4%) and the private hospitals' (3%). Among the hospitals of the SUS network, the leading health units used were: Hospital Getúlio Vargas (68 injured), Hospital Salgado Filho (25), and Hospital Carlos Chagas (21), all located in planning 3 of the city. MPCH, even though it locates at PA 1 in the city, remained the main hospital in the primary care of military police, accounting for 35% of the visits. It is important to note that the 475 patients included in

Table 3. Anatomical distribution of firearm injuries that affected military police in the metropolitan region of Rio de Janeiro (N = 475).

Anatomical distribution of firearm injuries *	Sim	
	Frequência	%
Face region	51	10,7
Head region	49	10,3
Neck region	12	2,5
Chest and abdomen region	82	17,3
Lower limbs region	195	41,1
Upper limbs region	157	33,1
Other regions	25	5,3

* Some patients affected by GW were affected in more than one part of the body.

Source: Records of the Central Hospital of the PMRJ surveyed

Table 4. Spatial distribution of locations where police injuries by firearms occurred in the metropolitan region of Rio de Janeiro.

Metropolitan Region/RJ (% of the city's population and number of neighborhoods)	MP with gunshot wounds		MP population	Police morbidity rates for firearms*	Demographic density (inhab / km ²)	% Population living in subnormal agglomerations **	HDI***
	N	%					
Rio de Janeiro (126 neighborhoods)	349	81,0	24616	14,18	5.265,82	22,2	0,80
AP1/RJ (4,6% of population; 15 neighborhoods)	73	20,9	2902	25,16	8.664,61	28,6	0,83
AP2/RJ: 2.1 e 2.2 (17,0% of population; 25 neighborhoods)	44	12,6	4123	10,67	10.048,49	14,7	0,93
AP3/RJ: 3.1, 3.2 e 3.3 (40,2% of population; 80 neighborhoods)	190	54,4	6298	30,17	11.791,22	23,1	0,83
AP4/RJ (11,6% of population; 19 neighborhoods)	25	7,2	1343	18,62	3.095,30	21,2	0,84
AP5/RJ: 5.1, 5.2 e 5.3 (26,6% of population; 20 neighborhoods)	17	4,9	1581	10,75	2.877,50	11,6	0,79
Niterói (52 neighborhoods)	9	2,1	978	9,20	3.640,80	16,4	0,84
São Gonçalo (63 neighborhoods)	3	0,7	896	3,35	4.035,90	1,3	0,74
São João de Meriti (13 neighborhoods)	18	4,2	439	41,00	13.024,56	10,3	0,72
Duque de Caxias (30 neighborhoods)	17	3,9	1006	16,90	1.828,51	7,2	0,71
Nova Iguaçu (73 neighborhoods)	10	2,3	-	-	1.527,60	1,2	0,71
Mesquita (17 neighborhoods)	6	1,4	903	24,36	4.310,48	0,6	0,74
Nilópolis (15 neighborhoods)	6	1,4	-	-	8.117,62	2,3	0,75
Belford Roxo (23 neighborhoods)	5	1,2	359	13,93	6.031,38	7,6	0,68
Magé (31 neighborhoods)	4	0,9	361	11,08	585,13	8,2	0,71
Itaguaí (49 neighborhoods)	2	0,5	-	-	395,45	7,5	0,72
Japeri (51 neighborhoods)	1	0,2	477	8,39	1.166,37	2,5	0,66
Queimados (60 neighborhoods)	1	0,2	-	-	1.822,60	3,9	0,68
Total	431	100,0	-	-	-	-	-

* RJ municipality- Police morbidity rates due to firearms / population density (inhab / km²): $r = 0.521$; $p = 0.368$.

** municipality of RJ - Police morbidity rates due to firearms /% Population living in subnormal agglomerates: $r = 0.855$; $p = 0.065$

*** municipality of RJ - Police morbidity rates due to firearms / Human Development Index - HDI: $r = -0.309$; $p = 0.612$

* Other municipalities in the Metropolitan Region - Police morbidity rates due to firearms / population density (inhab / km²): $r = 0.826$; $p = 0.024$

** Other municipalities in the Metropolitan Region - Police morbidity rates due to firearms /% Population living in subnormal agglomerates - $r = 0.130$; $p = 0.780$

*** Other municipalities in the Metropolitan Region - Police morbidity rates due to firearms / HDI - $r = -0.260$; $p = 0.573$

Source: MPCH records

this research were treated at the MPCH, either primary or after transfer from other units.

Discussion

The article addresses the occurrence of health problems caused by non-fatal firearm injuries

(GW) that affected military police officers in the state of Rio de Janeiro (RJ) who worked in the city's metropolitan area during their work activities. It questions the lack of health information of this working class and the role of the corporation's health directorates as an emergency campus, given the discourse of naturalization of the victimization of the military police.

The profile of military personnel affected by GW found in this article was made up of junior officers (especially soldiers), mostly male. As for the injury, they were shot in service; therefore, it is considered work accidents. Military Police of Rio de Janeiro is a hierarchical institution organized into subdivisions within two categories: officials and junior officers. Officers are prepared, throughout their careers, to exercise command, leadership, and direction. Junior officers, especially cables and soldiers, are nearly prepared for ostentatious policing and enforcement actions. The higher occurrence of firearm morbidity among this category can be explained, in part, by the greater exposure during ostensible policing. This profile is similar to that found by Plani, Bowley, and Goosen¹², in a survey carried out among police officers in South Africa.

According to the Active Personnel Department of the Military Police of Rio de Janeiro, the institution has 44,561 active police officers in 2018, 9,5% of whom are female. Considering the percentage of 1,7% of female police officers injured by firearms, we can ask whether they are less exposed to danger, whether working in administrative areas or in positions less vulnerable to assault by firearms.

The absolute numbers of police officers targeted during the study period demonstrate the high risk of firearm morbidity among military police officers in Rio de Janeiro, especially compared to other cities in the world. The Law Enforcement Officers Killed and Assaulted (LEO) in the United States of America (USA) routinely records all occurrences of morbidity and mortality among security officers in the country. In a report published in 2017, among a universe of 586,446 USA security professionals, 282 cases of firearm injuries were reported across the United States in 2016¹⁴. Berman and Salter¹⁵, in a survey on morbidity and mortality from firearms among police officers in Philadelphia (USA), found 125 police officers who were shot non-fatally in 12 years of analysis. Plani, Browley, and Goosen¹³, in South Africa, identified 92 police officers injured by firearms in a nine years survey. In Brazil, only Muniz and Soares¹⁸, Souza and Minayo¹⁹, and Minayo et al.²⁰⁻²² published morbidity data among military police officers in RJ without emphasizing the morbidities produced by firearms.

The main circumstance involved in the occurrence of firearm morbidity among military police was due to conflicting dynamics in communities in the city of Rio de Janeiro, as was found by Muniz and Soares¹⁸, differing from

other cities in the world in which the so-called response to disturbance of order and attempted arrest represent the circumstances of most significant risk for police officers^{16,17,23}.

In the urban areas of the city of Rio de Janeiro with the highest percentage of subnormal conglomerates, AP1 and AP3, a high concentration of police morbidity by firearms was found; however, when considering the rates of police morbidity by firearms and the percentage of the population living in subnormal clusters ($r = 0,855$; $p = 0,065$), this result is not significant. Likewise, if we consider the police morbidity rates for firearms and the Human Development Index in the municipality of RJ, we did not find a significant association between these factors ($r = -0,309$; $p = 0,612$), different from that observed by Kyriacou et al.²⁴ when analyzing the causes of police deaths in the cities of New York and London during the 20th century.

Regarding the higher occurrence of this type of morbidity in the regions with the highest demographic density in cities in the metropolitan region ($r = 826$; $p = 0,024$), we found significant results, indicating a relationship between the increase in police morbidity with greater demographic density. We can affirm, as well as Clarke and Zak²⁵, that urban areas represent a high vulnerability to the occurrence of firearm morbidity among police officers and assume that the risk of the police officers being targeted in the city of Rio de Janeiro is related to the areas of the greatest concentration of slums in the territory.

Regarding the battalions where the professionals were stationed, the largest number of police officers shot from the PPUs and BSO stands out. Despite the recognized tactical training of police officers belonging to BSO, this battalion had the highest percentage of military police officers wounded by firearms, considering the number of battalion personnel. This finding questions the effectiveness of recent public policies adopted in the state of Rio de Janeiro to reduce victimization among military police officers²⁶. In general, these were marked by an individualistic character, aimed at changing the police officers' lifestyle, referring to blaming the victim. The most recent example occurred after a high number of deaths of military police officers reported by the media, which led to the creation of the "Permanent Program for the Continuing Training of the Military Police" in January 2017, whose objective was to reduce lethality through training that would help the military to make proactive decisions in the face of threats²⁷. However, the high occurrence of

firearm victimization found among BSO police officers exposes the need for changes in public security policies based on confrontation operations. As a result, it is necessary to move towards structural reforms since tactical training alone is not enough to reduce the victimization of the military police.

The injured military police received first aid in several hospitals in the metropolitan region of Rio de Janeiro, especially in the SUS network located in PA 3 of the city. MPCH is the hospital that received the most injuries.

The median length of hospital stay at the MPCH was 0,0 days, as most patients (50,9%) were seen in the Emergency Department, where they received emergency care to stabilize the clinical condition and were discharged without admitted to the hospital. After emergency care, patients were discharged from the Emergency Department, but those who needed elective surgery returned to the hospital and were admitted to undergo the procedure. After admission to the hospital, the mortality rate can be considered low given the number of patients classified as having severe and regular clinical status (94,4%).

As for the anatomical location of the GW, injuries in the chest-abdomen region could, in most cases, be avoided or minimized through the use of bulletproof vests. The use of a ballistic helmet is not part of the arsenal of personal protective equipment for the police; however, this type of additional protection should be recommended because of the high number of head-neck-face injuries, helping reduce this morbidity.

The high rates of victimization found among military police officers in Rio de Janeiro indicate problems in the work strategy and public management that demand analyzing several factors involved. When analyzing violence in Western societies, classical sociology understands the State as a central component for its understanding. As stated by Weber²⁸, the conformation of the Modern State placed it as the holder of a monopoly on physical violence, or the right to violence, aiming the social control. Wieviorka²⁹ considers signs of the decline of this model, given the changes in the world scenario and the difficulty of current States in assuming their classic functions. Despite the changes that have occurred in recent decades, Public Security continues to play an essential role in the Democratic State of Rights, since *much more than repression in the face of illegal conduct, the police are expected to have an equal and isonomic distribution of usufruct rights to freedom and property to a maximum extent to*

*all individuals in the community*³⁰. When analyzing the violence against the police in Rio de Janeiro, many aspects would need to be addressed because of the complexity of the theme; however, we will consider two issues that we can circumscribe from Public Health's perspective. The first reveals that the high numbers of victimization of military police officers point to symptoms of the destruction of the security system; the victimization of the military policeman, to a certain extent, exposes the fragility of the State. The second reveals that it is crucial that there is a change in the understanding of the military police as a worker and subject of rights and that their lack of health information produces obscurity about this professional class as workers.

Minayo, Souza, and Constantino²¹ defined the Military Police of the State of Rio de Janeiro as a hierarchically organized and disciplined corporation with an institutional life rich in myths, symbols, insignia, and intensity of corporate vision. The profession is governed by the Statute of Military Police of the State of Rio de Janeiro, Law No. 443 of July 1, 1981³¹, which regulates the police officers' situation, obligations, duties, and rights. Among the nourished myths and symbols, we can see, from its Statute, that the police work relationship is symbolically seen as a priestly mission. In article 26, among the items of essential manifestations of the value and duty of the police is the "full devotion to the maintenance of public order, even at the risk of one's own life." Still in the Military Police Statute, in chapter II, full dedication to police-military service is required, which already calls into question whether the policemen, at any time, is off duty, since he must be fully dedicated and even willing to sacrifice his own life. Perhaps, it is possible to perceive one of the roots of the naturalization of police victimization since it is considered a duty to risk their own lives and their bodies suffer martyrdom in favor of a supposedly greater good.

The consequences of this form of being a police officer have, in practice, resulted in high rates of police morbidity and mortality. Likewise, when we do not publish these marks on bodies as a result of violence, over time, we contribute to their erasure, which, in itself, already has a political intention. The lack of disclosure of morbidities due to firearm injuries among military police officers, a symbol of armed violence, especially in Rio de Janeiro, may point to the intentionalities of speeches that naturalize violence over the policeman's body. According to Foucault³², the truth does not exist outside the power relationship and

operates through a political economy built on five characteristics: it is born from scientific discourse, is linked to economic and political interest, and is reproduced, disseminated widely, and consumed by the social body. The dissemination of these truths is under the dominant control of major economic-political devices: they are in dispute and are confronted continuously and subjected to supposedly ideological struggles. In this scenario of discourse production or interruption, we identified, in the absence of information on firearm morbidity among military police officers due to violence, an intention to interrupt a discourse that confronts the hegemonic knowledge that considers the policeman to be a professional with a priest or heroic vocation and that naturalizes violence. However, these speeches and knowledge are subject to emergence, to the entry of other forces that intend the truth, being able to reaffirm or transmute it. The health directorates and their professionals at Military Police of the State of Rio de Janeiro can, therefore, be places of emergency, confrontation and struggle, due to their nature, namely, the responsibility to ensure the health of the police. Even though it is not solely responsible for this emergency, the health campus at Military Police can play an essential role in realigning the current discourse, representing a powerful actor in this scenario of forces in dispute.

In this sense, the Military Police of the State of Rio de Janeiro Health Directorates is a key element for collaboration in the construction of knowledge that puts the naturalization of violence against police bodies in suspension. Besides, the visualization of information related to police morbidities will help construct more complex analyzes and diagnoses about the factors involved in police violence in their form of action and strategic planning. Such elements can make public health policies for the police and security for the State more robust to achieve an enabling environment for development and democracy.

The article has limitations, such as not having a representative sample of the total military police affected by GW in the city of Rio de Janeiro,

since there are military police that may have been treated, urgently, in private hospitals or other public hospitals and may not have been transferred to the MPCH. It indicates that the picture presented maybe even more severe. The severity of the accidents and the distance from the location where the injuries occurred to the MPCH make some police officers sent primarily to the nearest SUS emergency care units. After stabilizing the clinical condition, they are sometimes transferred to the MPCH. However, we cannot say that all military police in Rio de Janeiro are attended only by this health unit since adherence to the PM health plan is optional, with the possibility of other soldiers being attended by the private network or just through the SUS network. The fatal cases of military police officers affected by GW were also not analyzed in this study.

The article has strength in pointing to a relevant health problem that affects military police officers. Also, it highlights the lack of information regarding the magnitude and extent of GW morbidity. There is no monitoring of GW occurrence for those attended outside the MPCH, indicating the need for a system to monitor the policemen's morbidities in the state and country. It also points health professionals as critical elements to the health information system, still to be created.

Conclusion

In conclusion, the results of this study point to a high occurrence of firearm morbidity among military police officers in Rio de Janeiro. The profile of these police officers indicates a greater vulnerability to those wounded on the job. There was a correlation between the rates of police morbidity by firearms in municipalities in the metropolitan region and demographic density. Identifying risk factors and the circumstances involved in the health problems of these professionals can help in the development of recommendations and policies to prevent this type of morbidity.

Collaborations

ABP Maia participated in the conception, planning, analysis, interpretation, and writing of the work; SG Assis, FML Ribeiro, and L Wernersbach participated in the planning, analysis, and interpretation of the work. All authors approved the final version sent.

References

- Matta R. *As raízes da violência no Brasil: reflexões de um antropólogo social*. São Paulo: P.S. Pinheiro; 1982. p.12-43.
- Waiselfiz JJ. *Mapa da violência 2016: homicídios de armas de fogo no Brasil*. Rio de Janeiro: FLACSO; 2016.
- Waiselfiz JJ. *Mapa da violência 2013: mortes matadas por armas de fogo*. Rio de Janeiro: FLACSO; 2013.
- Cerqueira D, Lima RSD, Bueno S, Valencia LI, Hanashiro O, Machado PHG, Lima ADS. *Atlas da violência 2017*. Brasília: IPEA; 2017.
- Phebo L. Impacto da arma de fogo na saúde da população no Brasil. In: *Brasil: as armas e as vítimas*. Rio de Janeiro: 7 Letras; 2005. [acessado 2019 fev 12]. Disponível em: http://comunidadessegura.org.br/files/active/0/vitimas_armas_impacto_saude.pdf
- Fórum Brasileiro de Segurança Pública. *Anuário Brasileiro de Segurança Pública 2016* [internet] ano 10; 2016 [acessado 2017 ago 4]. Disponível em: http://www.forumseguranca.org.br/storage/10_anuario_sit_18-11-2016-retificado.pdf.
- Ehikhamenor EE, Ojo MA. Comparative analysis of traumatic deaths in Nigeria. *Prehosp Disaster Med* 2005; 20(3):197-201.
- Maia ABP. *Vitimização policial: morbidade por arma de fogo de policiais militares do estado do Rio de Janeiro*. [dissertação]. Rio de Janeiro: Fundação Oswaldo Cruz; 2018.
- Brasil. Ministério da Saúde (MS). Secretaria de Vigilância em Saúde, Departamento de Vigilância de Doenças e Agravos Não Transmissíveis e Promoção da Saúde. *Viva: Vigilância de Violências e Acidentes: 2013 e 2014* [internet]. Brasília: MS; 2017 [acessado 2017 ago 2]. Disponível em: http://bvsmis.saude.gov.br/bvsmis/publicacoes/viva_vigilancia_violencia_acidentes_2013_2014.pdf
- Rede Interagencial de Informação para a Saúde (RIPSA). *Indicadores básicos para a saúde no Brasil: conceitos e aplicações*. 2. ed. Brasília: Organização Pan-Americana da Saúde; 2008.
- Souza ER, Njaine K, Minayo MCS. A qualidade da informação sobre violência: um caminho para a construção da cidadania. *Cadernos do Programa de Pós-Graduação em Ciência da Informação* 1996; 2(1):104-112.
- Instituto de Segurança Pública do Rio de Janeiro (ISPRJ). *Relatório Vitimização Policial: 1998 - nov 2015* [eletrônico]. Rio de Janeiro: ISPRJ; 2015 [acessado 2017 ago 4]. Disponível em: <http://arquivos.proderj.rj.gov.br/ispimagens/uploads/RelatorioVitimizacao2015.pdf>
- Programa das Nações Unidas para o Desenvolvimento (PNUD). *Relatório do Desenvolvimento Humano 2014*. Nova Iorque: PNUD; 2014. [acessado 2019 mar 13]. Disponível em: <https://www.undp.org/content/dam/brazil/docs/RelatoriosDesenvolvimento/undp-br-hdr-portugues-2014.pdf>
- Instituto Brasileiro de Geografia e Estatística (IBGE). *Censo Demográfico 2010: Aglomerados subnormais, primeiros resultados*. Brasília: IBGE; 2011. [acessado 2019 mar 13]. Disponível em: https://biblioteca.ibge.gov.br/visualizacao/periodicos/92/cd_2010_aglomerados_subnormais.pdf
- Plani F, Bowley DM, Goosen J. Death and injury on duty-a study of South African police officers. *South African Medical J* 2003; 93(11):851-853.
- Federal Bureau of Investigation. *Law Enforcement Officers Killed and Assaulted. Type of Weapon and Percent Injured, 2007-2016* [internet]. [acessado 2017 ago 20]. Disponível em: <https://ucr.fbi.gov/leoka/2016/officers-assaulted/tables/table-75.xls>.
- Berman AT, Salter F. Low-velocity gunshot wounds in police officers. *Clinical Orthop Relat Res* 1985; (192):113-119.
- Muniz J, Soares BM, organizadores. *Mapeamento da vitimização de policiais no Rio de Janeiro*. Rio de Janeiro: Centro de Estudos de Segurança e Cidadania; 1998. [acessado 2018 nov 5]. Disponível em: https://www.ucamcsec.com.br/wp-content/uploads/2011/05/Monitoramento_vitimizacao_policiais.pdf
- Souza ER, Minayo MCS. Policial, risco como profissão: morbimortalidade vinculada ao trabalho. *Cien Saude Colet* 2005; 10(4):917-928.
- Minayo MSC, Souza ER, Constantino P. Riscos percebidos e vitimização de policiais civis e militares na (in) segurança pública. *Cad Saude Publica* 2007; 23(11):2767-2779.
- Minayo MCS, Souza ERD, Constantino P. *Missão prevenir e proteger: condições de vida, trabalho e saúde dos policiais militares do Rio de Janeiro*: Editora Fiocruz; 2008.
- Minayo MCS, Assis SG, Vasconcellos COR. Impacto das atividades profissionais na saúde física e mental dos policiais civis e militares do Rio de Janeiro. *Cien Saude Colet* 2011; 16(4):2199-2209.
- Swedler DI, Kercher C, Simmons MM, Pollack KM. Occupational homicide of law enforcement officers in the US, 1996-2010. *Inj Prev* 2013; 20(10):35-40.
- Kyriacou DN, Monkkonen EH, Peek-Asa C, Lucke RE, Labbett S, Pearlman KS, Hutson HR. Police deaths in New York and London during the twentieth century. *Inj Prev* 2006; 12(4):219-224.
- Clarke C, Zak MJ. *Fatalities to law enforcement officers and firefighters, 1992-1997*. *Month Labor Review* 1999; 3-7.
- Ramos S. Violência e polícia: três décadas de políticas de segurança no Rio de Janeiro. *Bol Segur Cidadania* 2016; 21: 1-33.
- Polícia Militar do Estado do Rio de Janeiro (PMERJ). *Programa Permanente de Capacitação Continuada* [internet]; 2017 jan 5. Rio de Janeiro: PMERJ; 2017 [acessado 2017 ago 4]. Disponível em: <https://pmerj.rj.gov.br/nota-sobre-vitimizacao-de-policiaismilitares/.5dejande2017>
- Weber M. *Economia e sociedade: fundamentos da sociologia compreensiva*. 4ª ed. Brasília: Universidade de Brasília; 2004.
- Wiewiorka M. The new paradigm of violence. *Tempo social* 1997; 9(1):5-41.
- Andrade Filho ACB. O poder de polícia no estado democrático de direito. *Rev Jus Navigandi* 2009; 14:(2138) [acessado 2018 mar 18]. Disponível em: <https://jus.com.br/artigos/12771/o-poder-de-policiano-estado-democratico-de-direito>

31. Brasil. Lei nº 443 de 1 de julho de 1981. Estatuto dos Policiais Militares do Estado do Rio de Janeiro. *Diário Oficial da União* 1981; 02 jul.
32. Foucault M. *Microfísica do poder*. 4ª ed. Rio de Janeiro: Paz & Terra; 2016.

Article submitted 30/04/2019
Approved 18/07/2019
Final version submitted 20/07/2019

Chiefs Editors: Romeu Gomes, Antônio Augusto Moura da Silva