

## Repercussions on work, health and family relationships of police officers wounded by gunshot to the face

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**Abstract** *This article aims to identify the profile of police officers who underwent surgery due to gunshot wounds to the face, to survey the anatomical distribution of injuries and the repercussions on their health, work and family relationships. We conducted a retrospective epidemiological study based on secondary data of police officers who underwent surgery at the Central Military Police Hospital of the state of Rio de Janeiro due to gunshot wounds to the face from June 2003 to December 2020 (N=87). We also adopted a qualitative approach by applying a questionnaire with open and closed questions (N=37) to survey repercussions of the violent event on police officers' work, families and health. The profile of police officers who underwent surgery showed that they were exclusively males, aged 34.9 years on average, privates, and injured in the line of duty. Fractures of the mandibular region were the most frequent injuries. After the accident, physical health conditions of police officers deteriorated, including an increase in cases of hypertension, a high frequency of insomnia (59.4%), and headache (51.3%). Damaged family relationship included an increasing trend of self-isolation and a feeling of fear experienced by police officers' family members.*

**Key words** *Police officers, Gunshot wound, Occupational health*

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## Introduction

Brazil has been historically marked by violence<sup>1</sup>. According to the Brazilian Public Safety Yearbook<sup>2</sup>, 47,773 people suffered intentional violent deaths in Brazil in 2020, 72.5% of which were caused by guns. Firearms are the main cause of injury among police officers in the line of duty worldwide<sup>3</sup>. In the state of Rio de Janeiro (RJ), high crime levels, armed clashes between police and drug trafficking groups and a large quantity of firearms in circulation have resulted in a high number of police officers hit by gun bullets, producing fatal and/or disabling injuries, increasing health risks of this population<sup>4</sup>.

It is known that the risks of their profession and the violence police officers experience on a daily basis have seriously impacted their mental and physical health<sup>5-7</sup>. According to Dejours<sup>8</sup>, work interferes in the construction of subjectivity, puts it to the test and may result in either constructive and/or destructive aspects in the subjectivity of workers. Working is not merely about producing, it is rather about transforming oneself. Studies have emphasized that these impacts on the health of police officers result from insalubrious working conditions, such as poor nutrition, work overload, a constant environment of violence that includes armed clashes and cause a high rate of victims. Work organization often clashes with the relations of police officers with their peers and superiors, they live in constant fear for their safety and society hardly recognizes police work<sup>7,9</sup>. Consequences of this working method also interfere with the mental health of their relatives<sup>10</sup> and impact their social relationships<sup>11</sup>.

Despite an increase in studies in the last decade that analyze the work relationships of military police officers and their impacts on health<sup>12</sup>, and despite the fact that we know that the occurrence of morbidity by firearm among military police officers (PM) in the state of RJ is high, few studies discuss the consequences of the occurrence of this type of morbidity on work, health and family relationships, which is, in turn, a research gap<sup>13</sup>.

Therefore, the present article conducted a survey on patients who underwent surgery due to non-fatal gunshot wounds (GSWs) to the face, i.e., active military police officers of the state of Rio de Janeiro. It further presents the repercussions of this type of injury on their life, focusing on aspects related to their health, police work and their family relationships.

## Materials and methods

We adopted both a quantitative and a qualitative approach to achieve the goals of the present study<sup>14</sup>. Analyses were performed based on two instruments obtained from the Oral and Maxillofacial Surgery and Traumatology Clinic (CTBMF) of the Central Military Police Hospital (HCPM). The first of them (*Instrument 1*) contains information we obtained from patient progress charts of 87 active duty police officers who were injured by firearms to the face and were admitted to the clinic between June 2003 and December 2020, i.e., 16.1% of the total number of police officers treated at the hospital for all causes. Civilian patients and retired military personnel were excluded. Epidemiological information included: age, gender, race/color, date of trauma, position or military rank at the time of injury. Maxillofacial injuries were classified according to their location, if the injuries had resulted in face bone fractures and their location, distributed by region: mandibular, maxillary, zygomatic-orbital, nasal and frontal. We also took into account patients' general health condition before the injury, the number of surgeries performed after the trauma, the most frequent complications and sequels found and the health specialties involved in rehabilitation. Data were entered in a standardized form based on the variables of the document made available by the clinic and typed into a database (Epidata 3.0 software program). This analysis stage included only police officers with facial GSWs who did not immediately die as a result of their injuries and thus required oral and maxillofacial care.

The *second instrument* is based on a questionnaire introduced at the clinic in 2019 to survey the repercussions of facial GSWs. It was applied to 37 face-wounded police officers at the HCPM between December 2019 and September 2021 and contains open and closed questions. The mean time between facial GSWs and filling out of instrument 2 was 7.1 years. All 87 police officers were invited to the clinic for treatment, i.e., a 42.5% response rate in relation to the total number of facial GSW patients admitted to the hospital during the investigated period. That low response rate was mainly due to poor contact information, since many phone numbers found in the medical records were outdated. Phone numbers of 20 police officers were missing, 4 had been dismissed due to discipline issues, 6 had died, 1 was on *ex officio* leave, 1 refused due to health restrictions and 18 did not answer

our calls. Those non-interviewed police officers (N=50) were male military privates (100%), aged 33.7 years on average and 89% of them had been wounded in the line of duty. The longer ago the injuries had occurred, the lesser they would answer. From 2003 to 2007, our losses were 68%, from 2008 to 2012 they were 66.7%, from 2013 to 2017 they were 57% and from 2018 to 2020, they were 35.8%.

*Instrument 2* contains questions related to: a) identification of the patient's profile; b) health care received; c) general and oral health impacts after GSWs, diseases acquired after the injury, body mass index (BMI / weight, divided by height squared, considering obesity  $\geq 30$  kg/m<sup>2</sup>), frequency of physical activity practiced, habits such as smoking; d) impacts on social and family relationships; e) impacts on work performance and resulting issues; f) functional and/or aesthetic limitations resulting from trauma. Data were processed using a database (Microsoft Office Excel 2019 software program). We used the SPSS Statistics version 19.0. software program to process and analyze all information by performing a descriptive analysis that includes the presentation of frequencies and percentages.

A content analysis was performed to obtain a qualitative analysis, i.e., the modality of *thematic analysis*, which required performing the following steps<sup>15</sup>: (1) digitize interview notes; (2) assign thematic blocks; (3) comprehensive reading of digitized texts to detect particularities and coincidences among reports; (4) group excerpts of most illustrative reports; (5) identify main ideas; (6) identify meanings attributed to ideas; (7) elaborate interpretative syntheses. Analyses were performed to understand, interpret and synthesize the impacts experienced by police officers at work, in their family, in their way of being and they were also asked what they feel is *the best* and *the worst* of being a police officer after they had been injured.

The research was submitted to and authorized by the Fiocruz Research Ethics Committee (CAAE 31541320.8.0000.5240).

## Results

From June 2003 to December 2020, 196 facial GSW surgeries were performed on 87 active duty police officers, i.e., an average of 2.2 surgeries per patient injured by firearms. In our analysis, all patients were male (N=87), between 24 and 49

years old (34.9 years old on average). Regarding skin color, 51.5% were identified as white, 28.5% as black and 20% as brown.

Professional profile of police officers included predominantly privates (97.7%), especially soldiers (40.1%), who were injured in the line of duty (73.5%). Among the circumstances of accidents that happened off duty, mugging or attempted robbery ranked first (73.2%), followed by suicide attempt (9.6%).

Regarding analyzed oral and maxillofacial injuries, 82.7% suffered facial fractures. Considering wound size, 72 patients presented 122 fractured facial regions, among which the mandible region was the most affected one (Table 1).

Due to the severity of gunshot wounds, 18.4% of the patients had to be submitted to tracheostomy. Medical records of the 87 patients of our sample show 282 occurrences of sequels and complications caused by trauma, as seen in Table 2.

Regarding "health impacts", anamnesis of *Instrument 1* (N=87) reported on the first consultation showed that 6.9% of the patients suffered from hypertension and 1.1% from gastritis, joint pain and diabetes. Analysis of the questionnaire answers on the repercussions of injuries (*Instrument 2*, N=37) showed that health conditions of patients had worsened further (Table 3).

"Impacts on work" ranged from full-time leave from work to changes in their way of working or in their functions. According to the Medical Health Board of the State Department of Military Police<sup>16</sup>, 20 police officers were classified as fit for work and 17 as unfit for work. Accident leaves lasted 15.4 months on average (N=29). This figure excludes eight police officers who were still on accident leave on the day of the survey interview.

Regarding their way of working, only two interviewees did not mention any changes after their accident. Reported changes showed behavior marked by either greater caution or greater work exposure to seek *revenge*, both of which were permeated by a feeling of fear. Some injured police officers had performed tactical functions of conducting operations but were no longer able to perform them after their accident:

*Initially, I sought revenge, I wanted revenge! I had to be treated by a psychologist for 4 years to feel better.*

*I felt much fear. Before, I knew there was a risk, but now I'm sure about it and I feel much fear.*

*I had to get off the front line of operations due to my fear.*

**Table 1.** Distribution of maxillofacial fractures caused by firearm trauma in 87 active duty military police officers who underwent GSW surgery (June 2003 to December 2020).

Oral and Maxillofacial Region	% of fractures by region (N=122)	% of patients with compromised region (N=71)
Mandible	32.8	56.3
Maxilla	26.2	45.0
Zygomatic-orbital	22.9	39.5
Nasal	9.0	15.5
Frontal	6.5	11.3

Source: CTBMF clinic of the HCPM. Survey performed manually by the authors.

**Table 2.** Distribution of facial sequels and complications resulting from trauma suffered by military police officers of the state of Rio de Janeiro (June 2003 to December 2020, N=87).

Complications and Sequels	N	% of second occurrence (N=282)	% per patient (N=87)
Dental loss	67	23.7	77
Loss of bone segments	61	21.8	70.1
Dysesthesia (paresthesia and paralysis)	81	28.7	93.1
Recurrent infection / sinusitis	44	16.6	50.57
Limited masticatory function	25	8.86	28.7
Malocclusion	21	7.4	24.1
Temporomandibular dysfunction	10	0.35	11.49
Anosmia	4	1.4	4.59
Limited speech	8	2.8	9.1
Glandular changes	6	2.1	6.8
Fixing failure	3	1.0	3.4
Loss of visual acuity and/or amaurosis	16	5.67	18.3
Changes in the lacrimal apparatus	3	1.06	3.4
Graft loss	2	0.7	2.29
Total	282	100	-

Source: CTBMF clinic of the HCPM. Survey performed manually by the authors.

**Table 3.** Answers to closed questions about the health conditions of military police officers with facial GSWs in the state of Rio de Janeiro from June 2003 to December 2020, N=87 and from December 2019 to September 2021, N=37.

Variables	Instrument 1	N=87	Instrument 2	N=37
	Prevalence %	N	Prevalence %	N
Hypertension	6.9	6	21.6	8
Diabetes	1.1	1	5.4	2
Gastritis	1.1	1	18.9	7
Headache	0	0	51.3	19
Heart disease	0	0	5.4	2
Spine/joints	1.1	1	50	17
Insomnia	-	-	59.4	22
Body Mass Index (obesity)	-	-	75.6	28
Received/receives psychological treatment	-	-	73	27
Does some physical activity at least once a week	-	-	30	11
Smoker	-	-	13.5	5
Takes some kind of medicine on a regular basis	8	7	29.7	11

Source: CTBMF clinic of the HCPM. Survey performed by the authors.

Police officers frequently reported that soon after returning to work, some of them had a more impulsive and reactive behavior. Most of them (N=34) answered that work posed a constant threat. As for working conditions over the long run, 21 police officers reported improved working conditions, especially better vehicles (N=10), weapons and bulletproof vests (N=11). Police officers who reported worsened conditions complained about the lack of camaraderie among peers at work and the lack of respect by society towards police officers.

When asked what they considered *the worst thing about being a military police officer*, the central ideas of open answers showed a strong dissatisfaction regarding the form of relationship with superiors (N=17) and how poorly SEPM recognizes the work of privates (N=13). We would like to emphasize that the lack of recognition by society (N=6) and the professional risks (N=6) were less often cited:

*I think the worst is the lack of support by authorities within the institution itself.*

*The lack of support by the police corporation in every way. In an incident, when you are in a situation that gets critical, when there is a complaint against you. You are immediately found guilty and after that you have to prove that you are innocent. It has happened to me; I have been wronged and I had to prove that I was innocent. This was a long time ago. It had a hard time because I did not know what would happen.*

*The worst is... I think our general command, the superiors. We may accept that society does not recognize us, but it's the worst kind of experience not to be recognized by superiors, by the institution itself.*

*The constant threat to life for being a police officer, including in one's free time.*

When asked what they considered *the best of being a police officer*, they stated that they felt a great satisfaction in being able to help people and serve society (N=15). Interviewees also stated to enjoy the fact that they were financially stable (N=6) and that their career as police officers allowed them to build friendly relationships (N=4):

*Career opportunities for financial improvement.*

*I feel useful when I meet the demands of society, I like to be on radio patrol, to interact with people.*

*I enjoy being a policeman, to help, to be useful.*

*The satisfaction of removing a criminal from society, doing something good for society.*

Regarding "repercussions on their families", police officers pointed out changes in social life, financial losses and health issues by family mem-

bers. As for the family context, 30 were married and 7 were single. They had an average of 1.6 children, they lived either in their own and fully paid home (N=14), their own financed home (N=9), in a rented home (N=12) or in granted home for free (N=2). Police officers also reported the lack of security in their neighborhoods and two of them had even to leave their home due to orders given by local traffickers. Despite those issues, the 29 police officers mentioned that their family was the main support network to overcome their difficulties:

*I rarely leave my home; I never go out at night. My wife also got ill, especially when we were evicted from the house we lived in. When I get invited to a party, depending on the location it takes place, I won't go by any means.*

*My daughter became afraid of everything, of being alone, of taking buses, afraid of everything. She started doing therapy at the police headquarters, but then the policy changed, the psychologist was dismissed and my daughter had to interrupt her treatment.*

*I don't sleep well, I stopped interacting socially with other people. To get an idea, I never could go back to my mother's house who lives in the neighborhood where I was mugged.*

*After the accident, my wife became much more worried. Every time I leave home, she gets nervous. If I get delayed, her blood pressure increases. She had to seek psychological help.*

Regarding married police officers (N=30), 22 stated that their accident had an impact on the life of their spouses. Increased irritability and impatient behavior towards spouses or partners were reported more often. Three police officers got divorced, others reported that their wives became increasingly fearful and anxious, as well as more concerned for the safety of their families. Some started to suffer from depression and hypertension after the accident of their husbands. However, some also reported that the quality of their relationship improved after the accident (N=2) given the feeling of solidarity that resulted from their suffering. Fear was most often mentioned to describe the impacts on their children after the accident, as well as depression and the need for psychological help for some children.

Reports that mentioned "changes in the way of being" (N=32) stated a decrease in social life that resulted in self-isolating behavior:

*A trauma, right! I avoid taking buses. I was also afraid of becoming permanently disfigured and I stopped smiling as I lost some of my teeth. I hardly leave my home; I relate to few people only. I wasn't*

*able to resume my normal life, I suffered from depression, I got hospitalized. The PMERJ psychiatry department could not treat me and I had to seek private treatment.*

Changes occurred due to limitations in physical and emotional health, fear of getting injured again and worsened financial conditions of the families. Physical difficulties involved dissatisfaction with facial aesthetics and acquired functional limitations, such as loss of visual and auditory acuity, as well as chewing limitations. Financial impacts resulted from the fact that police officers were unable to perform extra jobs in their free time or vacation to increase their income, from extra health care expenses, loss of bonuses due to their different health status, and from the fact that their wives lost their salary as they had to stop working to take care of their husband's health.

## Discussion

Facial GSWs result in blunt penetrating injuries of maxillofacial segments, which usually result in wounds associated with serious risks to the physical and emotional health of patients due to frequent aesthetic and functional impairment that challenge surgeons<sup>17</sup>. Professional profiles of facial gunshot wound patients included military privates, especially male soldiers aged 34.9 years on average who had been shot in the line of duty. The average age of facial GSW patients was found to be higher among military police officers when compared to civilian patients<sup>18,19</sup>. The fact that wounded patients are only male may be explained by the low number of female police officers in the State Department of Military Police and that most privates who take part in confrontational operations are male, which exposes them to higher degree of violence due to the effects of the distribution of corporate work and of permanent social conflicts.

GSW surgeries performed on police officers made up 16.2% of those performed at the CBMF clinic of the HCPM, which is a very high rate when compared to the civilian population that varies from 1%<sup>20</sup>, 2%<sup>21</sup> to 6%<sup>22</sup> of operable maxillofacial trauma. Despite the fact that the police officers surveyed by this study do not represent the totality of the police force's occurrences, the HCPM is the main hospital for police officers statewide, i.e., it accounts for 35% of the emergency care provided to GSW patients<sup>7</sup>. It is common knowledge that public safety pro-

professionals are exposed to a higher danger to life compared to other professions<sup>23-25</sup>, which is due to the nature and tasks of their occupation. Even if we take into account those circumstances, rates found among police officers in Rio de Janeiro are unusually high<sup>7,16</sup>. Mandibular fractures were the most frequent type of GSWs, as reported by the literature<sup>13,17,21</sup>, followed by fractures in the maxillary region and in the zygomatic-orbital region. On average, every patient presented 1.4 regions with maxillofacial fractures. These fractures were accompanied by extensive losses of teeth, bone segments and dysesthesias, which can be explained by the high avulsion and destructive potential of firearm bullets.

Over the past two decades, studies have reported a wide range of health issues of public security professionals in Brazil<sup>26-30</sup>. This especially corroborates that issue, as it shows that after the occurrence of GSWs, the health condition of analyzed police officers got worse. We found a large number of cardiovascular and gastrointestinal diseases, joint/spine issues, an increase in diabetes and a high occurrence of insomnia, headache and chronic pain. A high rate of obesity and overweight, in addition to a sedentary lifestyle rate above average of the Brazilian population<sup>31</sup> are additional risk factors of concern.

Factors associated to harmful facial GSW impacts on family and work relationships point to three causal aspects: a) complaints regarding facial aesthetics and visibility of injuries, as well as a contemporary perspective that takes into account the high representativeness of the face; b) a high perception of risk and the fear felt by the injured police officers and their families, and c) their working conditions and division of labor.

Regarding the high representativeness and visibility of the human face, we need to consider that it performs not only physical functions, i.e., speech, chewing, breathing, taste, vision, but that it also participates in the construction and development of our subjectivity and relationships<sup>32,33</sup>. The increasingly destructive power of firearms makes treatment of injuries more difficult and worsens sequels, hampering not only functional recovery, but also facial aesthetics of these patients. Opposed to and unaware of this difficulty, Elijah<sup>32</sup> and Le Breton<sup>33</sup> show how increasingly important the representation of the face has become for individuals over time since the fifteenth century while De Vihena<sup>34</sup> describes the growing social demand for facial aesthetics. Hence, despite advances in reconstructive techniques, reports on impaired facial aesthetics were

the most common occurrence found in medical records, as they resulted in psychological issues and in problems related to sociability, which have been described by Goffman<sup>35</sup> in his studies on social stigma as a derogatory attribute and its impacts on spoiling the identity of subjects.

The treatment of this type of morbidity requires multidisciplinary teams, multiple reconstructive surgeries, extensive recovery periods and it still results in physical limitations that invariably impact patients' life socially and emotionally. Other studies mention a long recovery period marked by chronic pain that affects patients' mood negatively and destabilizes them emotionally, worsening their quality of life<sup>17</sup>.

To analyze the effects of facial GSWs on the ability to perform work, we adopted a theoretical construction proposed by Dejours<sup>36</sup> to define *working conditions* and *division of labor*, as well as how patients dealt with their suffering at work. According to Dejours<sup>36</sup>, *working conditions* are related to the issues that affect the worker's body, which exclusively affect his physical condition. In this study, we found that armed clashes in the line of duty produced violent accidents that worsened the health conditions of these public security professionals in Rio de Janeiro, which is a consequence of adverse working conditions.

As for *division of labor*, Dejours<sup>36</sup> defines it as follows:

...task content (insofar as content derives from tasks), hierarchical system, command modalities, power relations, responsibility issues<sup>36</sup>(p.29).

Work organization may conflict with the psychic functioning of workers in such a way as to neutralize both collective and individual defensive strategies and produce pathological suffering. Antunes<sup>37</sup>, in a literature review on that topic concluded that hierarchy defines work organization of military police and is considered a factor that contributes to suffering and health issues. The high frequency of non-psychotic symptoms found in this article, such as insomnia, irritability, headache and gastritis may be manifestations or answers to a type of psychological distress as described by Bezerra *et al.*<sup>9</sup>. The recurrent narratives by interviewees who state that the problematic functioning of the institution's hierarchy is one of the *worst aspects of being a police officer* highlight the fact that the institution's work organization is a risk factor for the psychological suffering of injured police officers. On the other hand, camaraderie and the satisfaction that results from *helping people* may function as strategies that reduce their suffering.

Both the Brazilian and the international literature mention that work performed by public security professional poses a high risk of physical and psychological diseases<sup>23-25,38,39</sup>. Due to high rates of armed clashes in the city of Rio de Janeiro – which occur based on the logic that war against drugs is the main public security strategy –, police officers also show higher rates of losses in physical and mental health quality<sup>7,15,28</sup>. Analysis of facial GSW impacts on work performance shows that they resulted in long periods of accident leave for health treatments and a high percentage of withdrawal from ostensible policing activities. Thus, consequences arising from the work organization model of the military police added to the violent event and catalyzed the existing risk factors, deteriorating mental health condition of police officers who underwent surgery.

The present article shows that this type of injury frequently prevented police officers (75.7%) to resume ostensible policing activities. Azevedo<sup>40</sup>, in a study conducted with police officers on accident leave emphasizes that most of their frustration and dissatisfaction is due to the violation of their vocation, since they wish to preserve their police identity and to resume their initial condition, expressing their dissatisfaction with the restrictions and limitations. That high rate of withdrawal from work activities requires increased attention from health professionals who deal with these patients to help them cope with the changes in their way of life. Even police officers who were able to resume ostensible policing work had to rethink their careers and change their way of working.

The narratives about the impacts on relationships and work show that a feeling of fear and an increased perception of risk are directly linked and are the main perceptions that result from changes that occurred in their relations, way of living and working. Oliveira *et al.*<sup>11</sup> found that the feeling of fear lasts longer than the police officers' active duty time period and that the need for constant caution impacts the way they establish and maintain social relationships. Minayo *et al.*<sup>15,28</sup> found that police officers with a high perception of professional risk are among those who most often experience violence, such as the kind that results from firearms. This explains the extremely high risk awareness found among interviewed police officers who suffered facial GSWs. According to them, fear of getting injured is not a remote possibility, but daily reality which interferes by producing types of behavior that are

either more aggressive or more self-protective during ostensible policing work.

Regarding impacts on police officers' families, there is no doubt about the impacts on health, quality of life and marital relationship of their wives given the nature of their husbands' work<sup>41,42</sup>. Family relations are already often affected by the daily impacts of that kind of profession and after a violent accident such as GSWs, the family needs to find means and the strength to overcome difficulties. Detrimental consequences that affect family members of police officers include, as stated above, financial losses caused by a reduced family income, changes in the way of being of police officers, i.e., changes in routine and in the family's way of living, as well as mental health issues that may affect not only police officers, but also their family members. Such developments may sometimes cause couples to break up permanently.

Paixão<sup>10</sup> found a high prevalence of disorders among children of police officers in the state of Rio de Janeiro. Families that had experienced violence showed a higher degree of fear related to professional risks<sup>10</sup>. Police officers with facial GSWs mostly mentioned fear to describe the impacts on their spouses and children. That feeling of fear was related to their own insecurity and the fact that death had become very present in the life of their family members. Wound marks, which remain visible to patients and their relatives, remind them every day of the reality of death and the high risks police officers are exposed to in the state of Rio de Janeiro.

Results presented in this study emphasize the need to promote public policies that ensure better working conditions and support to injured police officers. Regarding health professionals who deal with them, however limited their scope of action may be from the anatomical point of view, it is inevitably related to issues that exceed the limits of health and physical disease. Hence, those professionals need to be attentive and prepared to deal with psychosocial issues involved and try to detect, at an early stage, a possible need for mental health care of facial GSW patients and their families. Considering the scope of impacts on the family, which is the main support network to tackle difficulties, we urgently need to develop measures that ensure more adequate and effective support during the recovery period of police officers. In addition, from the perspective

of workers' health, we need to clarify the reasons behind the high morbidity by firearms and the current working conditions that expose police officers to such a high rate of injuries.

This article is limited insofar as it does not provide a representative sample of the total number of police officers affected by facial GSWs in the state of Rio de Janeiro. This is due to the fact that some police officers may have been treated in other hospitals and due to the reduced number (42.5%) of subjects who were ready to answer the questionnaire on the impacts of facial GSWs. Despite these limitations, data point to a health issue that may be considered relevant for that professional category, but there is no information on either size or extent of the impacts of this kind of morbidity on work performance and family relationships.

## Conclusion

Profile of police officers who underwent surgery due facial GSWs included male privates who were 34.9 years old on average. Injuries and fractures in the mandibular region were the most common ones found. Facial GSWs resulted in long accident leaves for health treatment, high rates of definitive severance from work and limited work performance by those who resumed their position as police officers.

Changes in both their way of life and in social life resulted from their greater perception of police work risk and an increased visibility of their injuries. The feeling of fear that appeared after their violent accident produced impacts that included a greater tendency to self-isolation. Regarding family relationships, we found reduced physical and mental health and a decrease in family incomes of police officers and their family members.

The high occurrence of this type of morbidity among police officers of Rio de Janeiro has drawn attention to the need to discuss and rethink the way public security professionals perform their work, as well as their working conditions. Since this area is characterized by intersectoriality, studies that address the impacts on the health of police officers may contribute to developing measures aimed at improving the way these professionals work by focusing on a preventive approach that involves intelligence work, rather than on the current logic based on armed clashes.



## Collaborations

ABP Maia participated in the conception, planning, analysis, interpretation and writing of this article. SG Assis and MCS Minayo participated in the planning, analysis and interpretation of this article.

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