

EDUCATION ON TARGET

THE EFFECTS OF ARMED VIOLENCE
ON THE CLASSROOMS

21/07/2017

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Contents

1. Executive Summary	2
2. Introduction	3
3. Violence as a Structural Issue	4
3.1. Violence and Education	5
3.2. Violence in a debate of social justice	7
4. Analysis of data for the city of Rio de Janeiro	9
5. Conclusion	17
Methodological Note	19
7. References	20

1. Executive Summary

- ❖ The present study aimed to analyze data related to the public educational institutions in the city of Rio de Janeiro (state, municipal and federal schools and daycare centers) with reports of shootings/gunfire in the city;
- ❖ The objective of the research is to conceive public policies to meet the various needs of school-age children and teenagers who live in vulnerable areas with high rates of violence, especially of the armed type;
- ❖ Between July 2016 and July 2017, the city of Rio de Janeiro reported 3,829 shootings.
- ❖ We found that 1,809 elementary and intermediate education institutions and 461 daycare centers and child education services operate in the city;
- ❖ We identified priority areas for public policies based on two criteria: (1) the territorial concentration of schools and the incidence of shootings/gunfire and (2) the number of shootings/gunfire only;
- ❖ The neighborhoods of Costa Barros, Acari and Cidade de Deus are the ones with the largest number of municipal and state schools and daycare centers exposed to armed violence.
- ❖ A large part of the incidences of shootings/gunfire are concentrated in the North Zone, mainly in the regions of Complexo do Alemão (218 reports) and Maré (119 reports). Another area that draws attention is the vicinity of Avenida Brasil, near the neighborhood of Penha (128 reports).

2. Introduction

The problem of violence in Rio de Janeiro is structural and affects the quality of life of its citizens unequally, that is, there are areas concentrating more shootings than others, influencing the way people experience the city. In addition, the degree to which violence potentially affects people depends on proximity to the incident and on the age of the person in question. The closer to the violence and the younger the person, the higher the perverse effects of the exposure to violence. Therefore, the population in a condition of social vulnerability is affected in a disproportional way by this structural condition, which has consequences for their potential to develop skills, particularly for school-age children and teenagers.

From a point of view of providing adequate public services to the population, particularly school-age population, the situation of violence requires continuous acting by the State in order to mitigate the perverse effects caused by this exposure. Elaborated by FGV/DAPP from data collected through the application Fogo Cruzado, the aim of this Policy Paper is to contribute **to the elaboration of public policies that will meet the various needs of school-age people who live in vulnerable areas with high rates of violence, especially of the armed type**. Such policy is a way to demand from the State its role in equating the social differences that are caused by the public safety crisis.

The document is divided in four parts. The first one deals with the issue of violence as a multidimensional problem, which affects the quality of life and the development of the population. The second part contextualizes the issue of violence in a debate of social justice and explains why, in acting to mitigate the perverse effects of violence, the State is reducing inequalities. The third part presents an analysis of data on shootings/gunfire and on public schools in the city of Rio de Janeiro in order

to elect priority areas for action. The fourth and last part presents suggestions of public policies to better serve the affected population.

3. Violence as a Structural Issue

The daily life of the carioca population is affected constantly by episodes of violence. According to information from the Institute of Public Security (Instituto de Segurança Pública - ISP), in the year of 2016, more than 6 thousand people died violently in the state, averaging one violent killing every 90 minutes.

This dynamic of violence is also perceived in the city of Rio. Up until May, more than 500 violent killings had already been accounted for, according to ISP. However, it is important to situate these deaths and highlight the impact of this violence on the lives of state-school students. In February, more than 20 schools located at Complexo da Maré had their classes interrupted. This episode was repeated in March, causing 14 schools in the location to suspend the classes. The result was that more than 10 thousand students had their classes paralyzed in these two months.¹

Added to that are the grave episodes of violence that resulted in the deaths of children and teenagers inside educational institutions, or even close to them. The case of Maria Eduarda, shot inside her college in Acari and killed at thirteen years old, precisely illustrates the current scenario of unsafety in Rio.

In this panorama, there is no doubt about the need for structural policies capable of reverting the situation of unsafety and violence in Rio de Janeiro. However, in addition, it is also necessary to take into account the impact of violence on the learning process and its short-, medium- and long-term effects.

¹ Rio de Janeiro Municipal Education Office, available in a news piece by Extra: <https://extra.globo.com/casos-de-policia/a-cada-dia-letivo-tres-escolas-fecham-por-cao-de-tiroteios-no-rio-de-janeiro-21050449.html>

Therefore, we expect from the State the capacity to conceive public policies that are geographically focused and that cover the issue of public safety as a multidimensional theme. In this sense, the answer to this question involves a myriad of policies that do not mobilize exclusively safety professionals, but also includes professionals from the fields of health and education.

3.1. Violence and Education

It is a hard task to isolate the effect of violence in the development of children and teenagers from other social factors². That is because, in general, violence is part of a reality that is associated with other factors known to influence the development of skills by part of the individuals. For example, it is a known fact that there is a relationship between the development of skills and the educational level of the parents, or with the family income. It is also known that physical proximity to violent events increases the perverse effect that its exposure causes on children and teenagers³. That is, the closer the violent event is to children, the higher the probability that they present negative symptoms caused by this exposure.

Therefore, being a direct victim of violence in the community where one lives, as opposed to witnessing violence, results in more observable perverse effects. In a less consistent form, the effects are also perceived according to age: younger children present stronger signs of depression when exposed to high levels of violence in the region where they live⁴.

More specifically, there are comparative reports that relate the performance of the same group of children before and after exposure to violence, and present indications of change in their capacity to concentrate and control emotions in the period after the exposure. It is consistently reported that children and teenagers can develop similar

² Sharkey 2012.

³ Fowler, *et al.*, 2009.

⁴ Fowler, *et al.*, 2009

behavior to that of post-traumatic stress disorder (PTSD) after exposure to violence. The symptoms traditionally associated with PTSD affect cognitive processes, such as memory, the capacity to maintain attention, to plan and to solve problems⁵. Additionally, it gives rise to social interaction problems between pairs, since exposure to stressful situations can affect the volume of the hippocampus, the area of the brain associated with the capacity to control emotions⁶.

In summary, the exposure to a recent incident of violence affects two dimensions of a child's cognitive-emotional process⁷:

1. the ability to respond adequately to informational stimuli; and
2. the selective attention, or the capacity to assign attention to an emotional stimulus.

These skills directly influence the capacity of children to absorb stimuli and information. This situation is already worrisome when it happens a single time, considering these skills are essential in a classroom environment. The case becomes aggravated when there are repeated exposures to violence throughout a year, which can ultimately affect the development of skills among children, even if they are subject to the same stimuli.

We observe that the areas where shootings happen are areas in a context of social vulnerability. Therefore, school-age children and teenagers who live in these areas are doubly penalized when it comes to the development of their skills. That is because children in a vulnerable situation are generally not subject to the same quality or quantity of stimuli over the course of their lives. They are generally less subject to parental practices of reiteration of social interactions related to performing tasks and, frequently, they start school with less guided reading hours accumulated⁸. This causes a direct impact on the skills developed by

⁵ Hayes, VanElzakker and Shin (2012).

⁶ McEwen and Gianaros (2010).

⁷ McCoy, Raver and Sharkey (2015).

⁸ Evans, Brook-Gunn, Klebanov (2011).

children, even before they reach school age. The problem is aggravated with exposure to violence, which affects the capacity of learning and absorbing information by the students due to the ramifications of its perverse effects on the development of cognitive and socio-emotional skills.

3.2. Violence in a debate of social justice

In addition to, on average, experiencing a lower number of situations of positive stimuli, children and teenagers in vulnerable conditions are also subject to chronic exposure to stressful situations⁹, such as the cases of shootings and constant gunfire. Considering this scenario, the diagnosis is that children who are born in families and/or in areas of vulnerable situation are disadvantaged from the start of their lives, and the trend is for the hiatus of development to increase over time, eventually becoming irreversible.

Considering that children who live in areas at risk are generally exposed to different stimuli both in quality as well as quantity¹⁰; knowing that the stimuli explain the differences in the development of cognitive and socio-emotional skills and that these differences are already noticeable at 18 months of age¹¹; considering also that, in the process of child development, skills are auto-reinforced¹², that is, the more skills a child has, the more likely he or she is to develop new skills, since these differences in skills not only persist over time but also tend to grow¹³; we advocate in this document that carrying out interventions through public policies in areas susceptible to violent events must be a priority, especially from a point of view of social justice.

⁹ The chronic exposure to stressful situations affects the development of an individual's prefrontal cortex and its capacity to communicate with other areas of the brain (RAVER 2003).

¹⁰ It is known that the socio-economic status of families is directly linked with the development of areas of the brain related to language, memory and socio-emotional development processes (NOBLE ET AL 2015).

¹¹ World Bank (2015).

¹² Heckman 2006; Cunha and Heckman (2007).

¹³ Heckman (2006).

The idea of social justice can be understood as a concept based on equal rights in a given society. In this sense, justice, including its social facet, should be understood as a synonym of equity. Therefore, each member of the society should have the same rights and access to an adequate set of equal basic liberties. Consequently, equality is related to equitable opportunities for all and, in that case, the State must take on a role of protagonism, offering the most benefits to the least privileged members of the society, guaranteeing an environment of social cooperation¹⁴.

Considering this notion of social justice, we can see how violence becomes a barrier to the access to certain basic liberties and impedes the adequate access to equal opportunities. In the case of schools situated in areas of conflict, for example, the students from the community exposed to violence are deprived of the educational experience or have its quality affected, while students situated in locations without conflict enjoy unimpeded access to education. However, this does not mean that the residents in areas of conflict must frequent schools in regions with lower exposure to violence, but that they have the same rights to safe education.

What we expect is a State that is engaged and capable of developing adequate public policies for the population in vulnerable regions, which means adequately investing on the instruction of professionals able to work in these vulnerable locations and capable of developing actions adapted to the daily lives and needs of the children exposed to violent situations.

4. Analysis of data for the city of Rio de Janeiro

Violence is a factor that affects child development in such a way that its effects persist over time¹⁵. This makes it urgent for the public authorities to serve specially the school age population exposed to violence in the city.

¹⁴ Rawls, 2001.

¹⁵ Because the skills are characterized as being auto-reinforced, that is, the skills acquired are determinant for the development of new skills. Heckman 2006; Cunha and Heckman (2007).

In order to elect priority areas for action, FGV/DAPP and Fogo Cruzado georeferenced the data gathered on shootings/gunfire in the city of Rio de Janeiro, the information on daycare centers and public network schools and the rates of violent lethality¹⁶. Our goal was to elect priority areas for action through public policies to mitigate the long-term effects of exposure to violence and its impact on the development of skills and on the capacity of individuals to fulfill their own lives.

For this purpose, we identified priority areas for action through public policies based on two criteria:

(1) territorial concentration of schools and the incidence of shootings/gunfire and

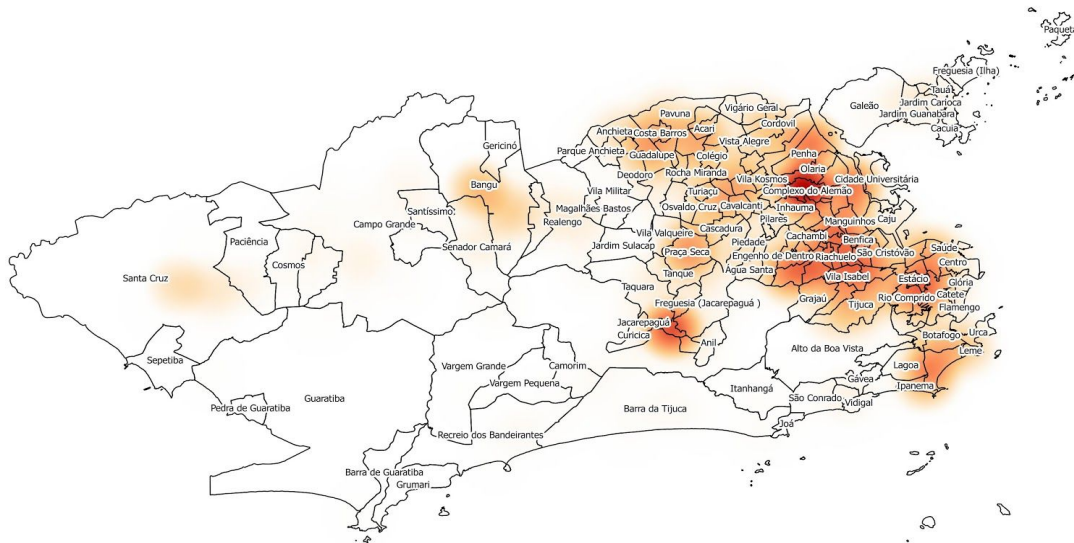
(2) the number of shootings/gunfire only.

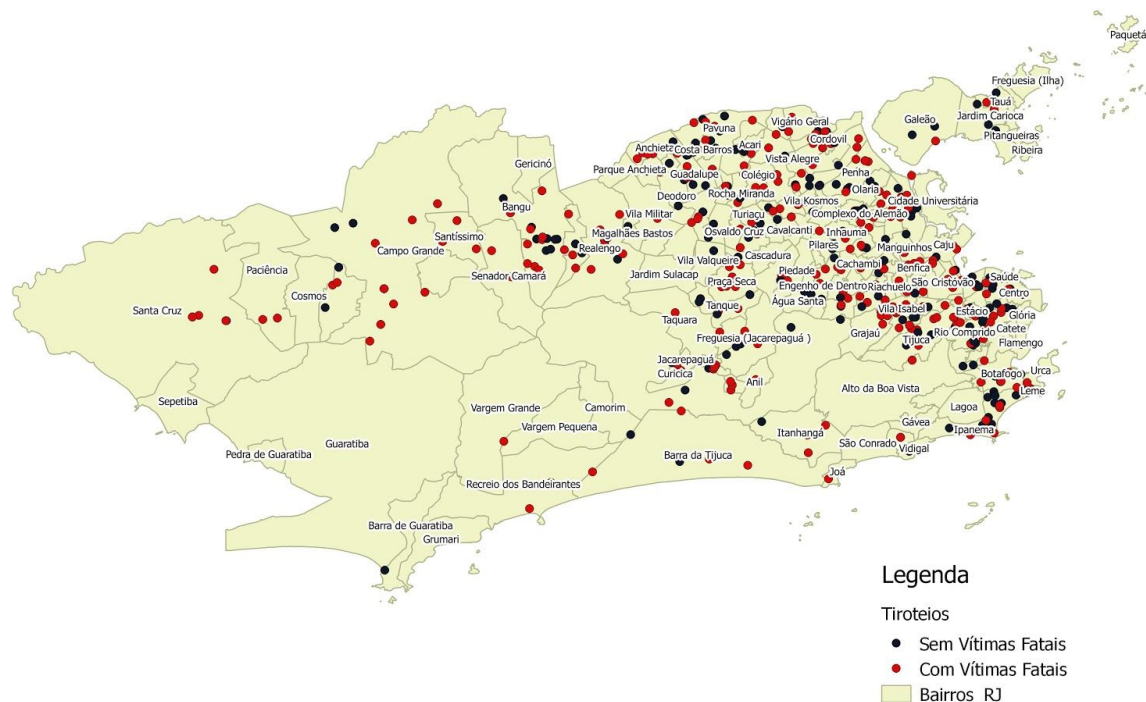
Regions that concentrate a large number of schools and have armed conflict must be under constant vigilance, given the large number of people affected by armed violence. In turn, schools located in areas with numerous reports of armed violence need public policies focused on the persistence of the symptoms caused by recurring exposure to violence, even if these areas do not have the same concentration of schools than other areas. This systematized information indicates priority areas for articulating public policies focused on children and teenagers who live in environments that are more susceptible to violent situations and, because of that, have their development opportunities impaired.

In the city of Rio, from July 2016 to July 2017¹⁷, 3,829 shootings were reported. The following heat map shows the concentration of armed violence in the North Zone and partly in the West Zone, indicating neighborhoods surrounding the spots as priority areas for action.

¹⁶ The category “violent lethality” includes the information available at the Institute of Public Security on murder, murder with intent to rob, murder due to resistance to police intervention and bodily injury followed by death during the time between July 2016 and May 2017.

¹⁷ This number refers to data for the city of Rio de Janeiro with verified and validated addresses.



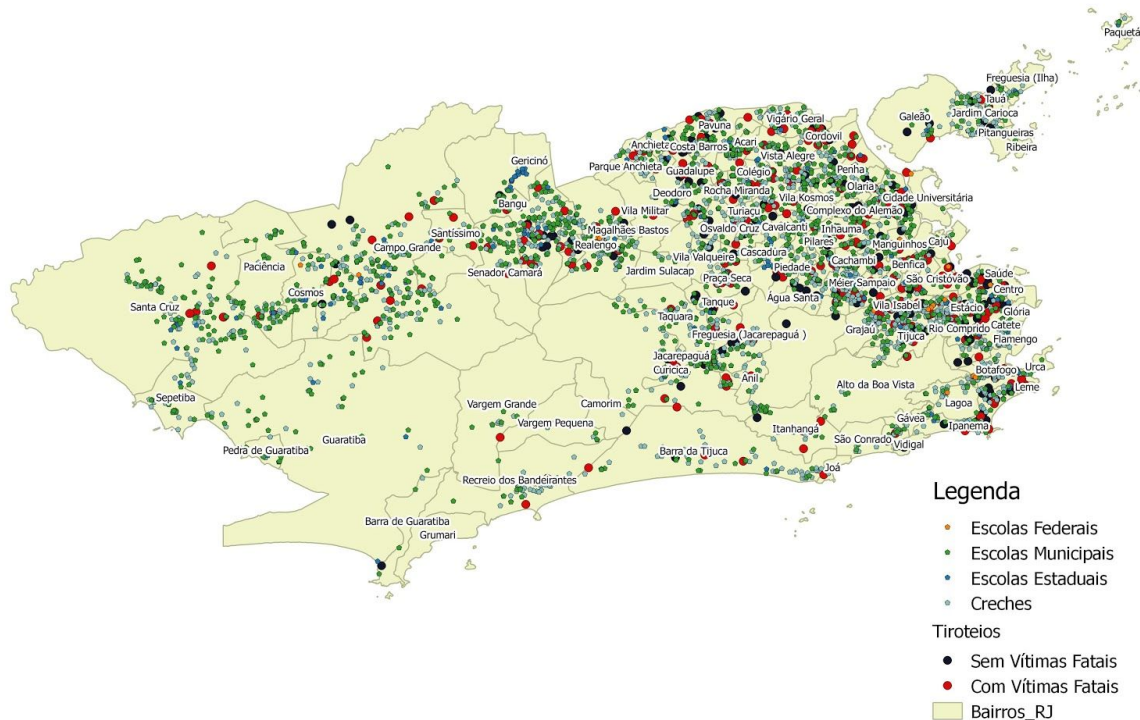


Source: Fogo Cruzado

Elaborated by: FGV/DAPP

Therefore, we notice a higher concentration of fatalities due to shootings/gunfire in the zones North and West of the city of Rio de Janeiro. As can be observed, the number of shootings with no fatalities is lower than the ones that caused deaths. In addition, when observing the georeferenced information on daycare centers and public schools in Rio, as follows, we notice an overlap between these pieces of information, which means there is a high concentration of schools and daycare centers in vulnerable areas, confirming the need for public policies focused on these priority areas.

Figure 3. Map of fatalities and public schools and daycare centers in the City of Rio de Janeiro

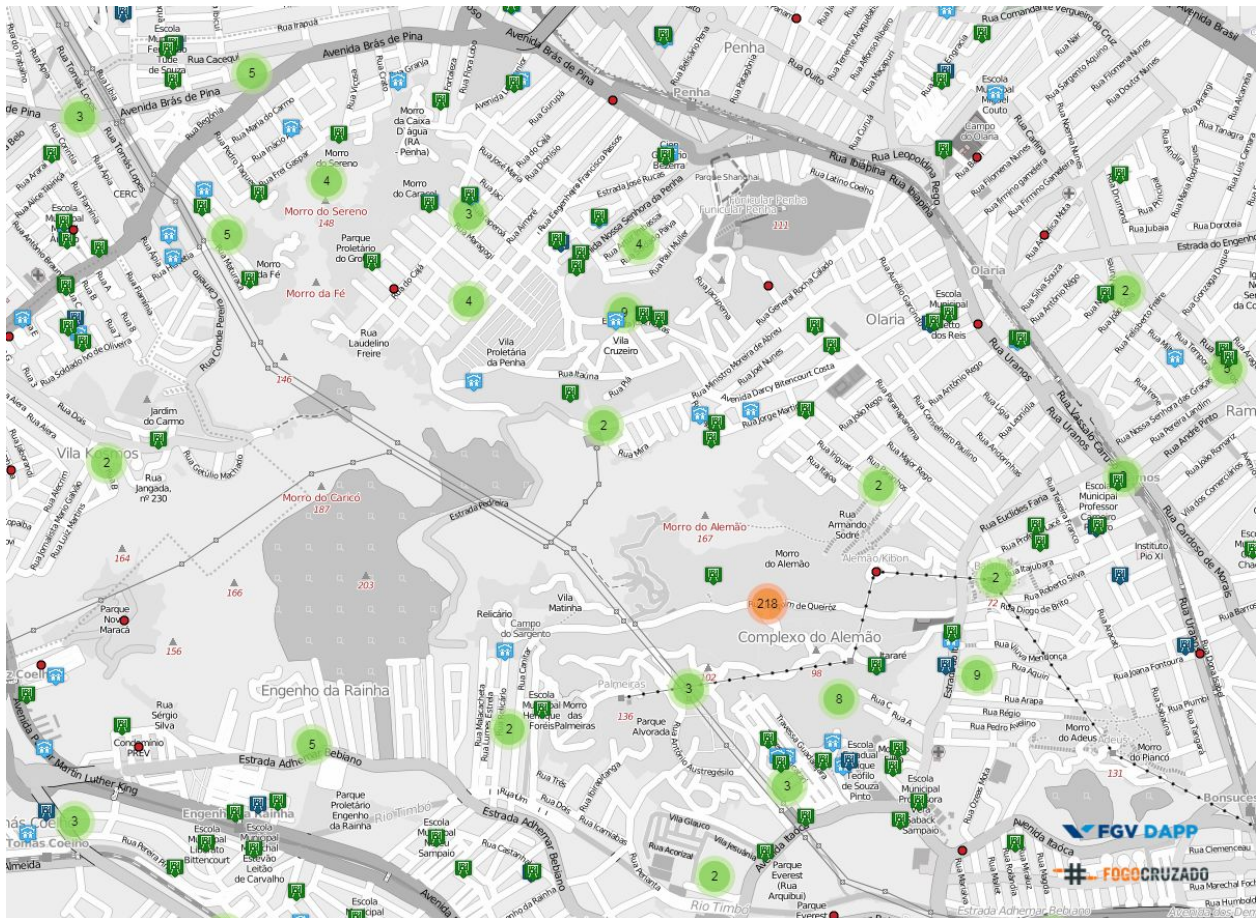


Source: Fogo Cruzado Elaborated by: FGV/DAPP

A large part of the occurrences is concentrated in the North Zone, particularly in the regions of Complexo do Alemão (218 reports) and Maré (119 reports). In the area of Complexo do Alemão, according to the most recent data available from ISP, 21 people were killed violently between July 2016 and May 2017, the most recent data available. In the region of Maré, in turn, 122 people were killed violently in the same period¹⁸.

Figure 4. Map of Public Schools and Number of Gunfire Events at Complexo do Alemão

¹⁸ It is important to note that the most recent information available on the database from ISP on violence in the city in 2017 covered only data up to May at the moment of concluding this research. Additionally, there is a chance that these data are underreported due to the civil police officers' strike in this year's first trimester.



Source: IPP, Public Ministry of the State of Rio de Janeiro and Fogo Cruzado

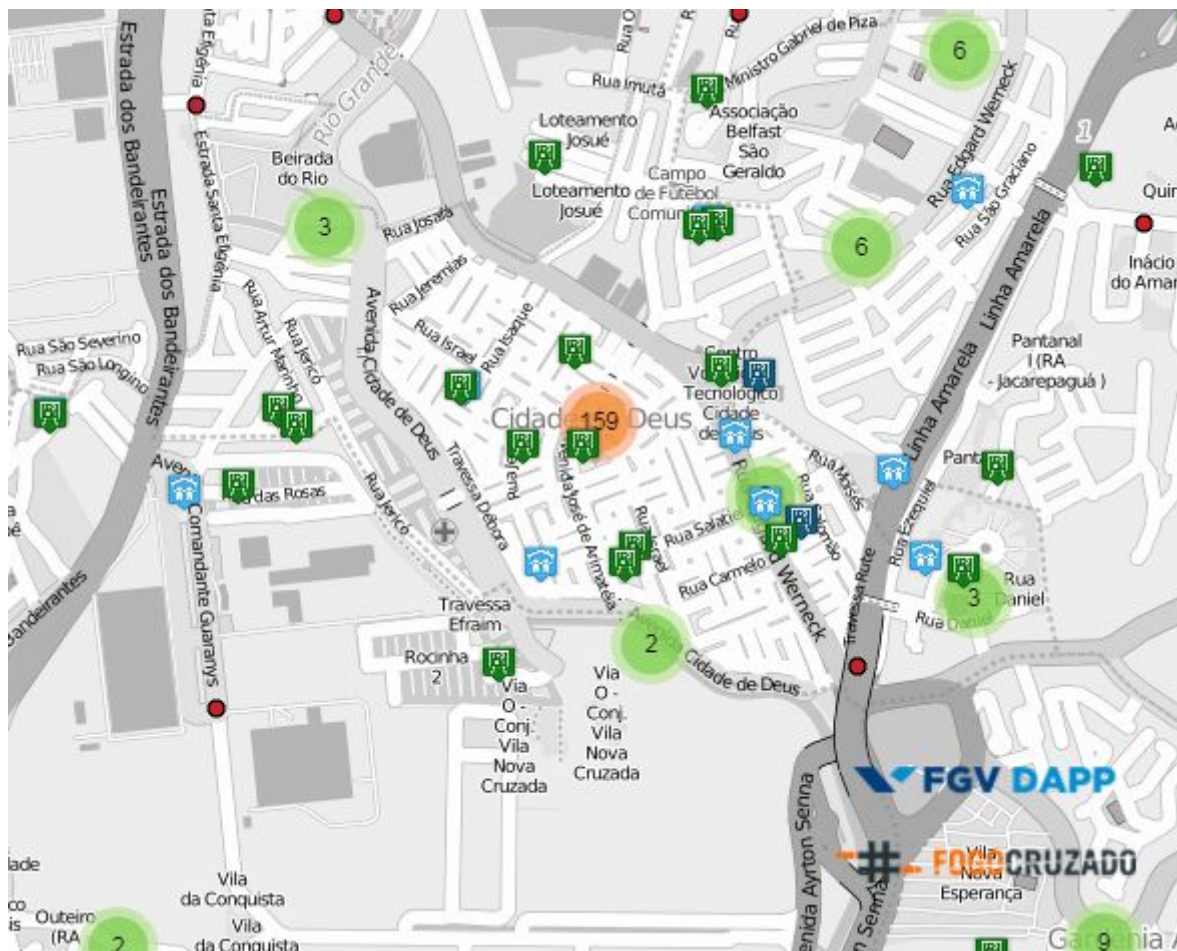
Elaborated by: FGV/DAPP

Another area that draws attention is the vicinity of Avenida Brasil, near the neighborhood of Penha. In this location, 128 reports and 71 violent killings were accounted for. The neighborhoods of Maracanã and Mangueira and Lins also reported high numbers of shootings/gunfire in the region: 104 and 101, respectively. In addition, in the region of Mangueira, 34 violent deaths were accounted for, and 18 in the region of Lins. An alarming fact is that, out of the 104 shootings in the neighborhoods of Maracanã and Mangueira, 72 happened in Mangueira alone, precisely in the region known as Parque Candelária, where there are two municipal daycare centers (Creche Municipal Eduardo Moreira dos Santos and Creche Municipal Homero

José dos Santos) and one municipal school (Escola Municipal Mestre Waldemiro).

Another alarming region of the city of Rio de Janeiro is the West Zone. 159 shootings were registered in the neighborhood of Cidade de Deus alone. In the neighborhood of Bangu, 63 occurrences near schools were reported. Regarding violent killings, 81 deaths were accounted for at Cidade de Deus, and 133 at Bangu.

Figure 5. Map of Public Schools and Number of Gunfire Events at Cidade de Deus



Source: IPP, Public Ministry of the State of Rio de Janeiro and Fogo Cruzado Elaborated by: FGV/DAPP

It is noteworthy to mention that the maps that represent shootings/gunfire reported in the city of Rio de Janeiro in this period present the data in clusters, that is, in groupings of dots that reflect the quantity and reach of each event. If, for example, a neighborhood accounted for 50 occurrences, the maps would not show 50 dots, but a joint representation of these 50 dots.

It is important to emphasize that in this visualization the clusters were classified as low occurrence (the groupings appear in a green circle), medium occurrence (the groupings appear in a yellow circle) and high occurrence (the groupings appear in an orange circle), thus reflecting the quantity of occurrences.

5. Conclusion

This document presented a georeferenced analysis of the situation of armed violence in the city of Rio de Janeiro between July 2016 and July 2017, together with a mapping of public schools in the city. Since exposure to violence causes lasting effects and directly affects the life possibilities of the citizens, **FGV/DAPP, in partnership with Fogo Cruzado, identified urgent areas in order to direct the actions of public authorities to mitigate the damage caused.**

Both the data from Fogo Cruzado and governmental data show that, despite it being spread out around the city, there is a significant concentration of violence in the North Zone and in areas of the West Zone. **Removing schools in these areas is not an adequate answer to this situation**, for two main reasons. First, because children and teenagers live in the communities where these schools and daycare centers are located. Even if the public schools were to be removed, the problem would remain and these children would continue to be exposed to the situation of violence

when returning to their homes. Therefore, they would continue to suffer the adverse effects of violence, which in turn has a direct impact on their learning and skill development capabilities, compromising the life possibilities of these children and teenagers.

Second, because removing these schools from the place they are located affects the autonomy of the population who frequent these institutions, now requiring that caretakers make a journey which was, until then, not necessary, reducing the possibilities of activities which those in charge of transporting these children can engage in during school time.

Taking into account that the public safety issues of the city of Rio de Janeiro are long-term and difficult to solve, and recognizing that the exposure to violence can possibly cause skill development and learning problems, this opens a field of possible action by the public authorities to **build a city that minimizes the effects of its own inequalities**. In this sense, we identify the need to prioritize the following public policy actions:

- Guarantee **safety** in the areas exposed to violence, prioritizing, mainly, the **working hours** of the **schools and daycare centers**;
- Offer training to the teachers, so that they can meet the **special needs** of their students due to **exposure to violence**;
- Offer **special conditions** for hiring the professionals who act in these areas, in order to guarantee **stability** in the school relations, aiming to decrease the high turnover of teachers. These special conditions must cover from **salary bonuses** due to **unsafe** conditions to ongoing **psychological care** for the teachers themselves, and include more frequent training courses;
- **Prohibit** police from using **daycare centers and schools as operating bases**;

- Guarantee the presence of **mental health professionals** specialized in tending to children and teenagers with behavior similar to **PTSD**, and capable of dealing with the traumas caused by continuous exposure to violence;
- Complement the actions with **tending to the families** who reside in the identified areas, with a **home program** aiming to instruct parents and caretakers of the affected children.

The agenda of propositions above seeks to mitigate the adverse effects of exposure to violence in school-age children and teenagers, emphasizing the multidimensionality of effects involved in the public safety agenda and favoring a perspective of **prevention and damage reduction**. Considering the reality of Rio de Janeiro, these policies must be applied progressively and continuously **to the entire city**. Still, from a perspective of social justice, the present study, working with georeferenced data on armed violence, indicates the **urgent priority areas for action**.

Methodological Note

For the analysis of the reports of shootings/gunfire, we used data from Fogo Cruzado, a collaborative platform whose goal is to measure the incidence of armed violence in the metropolitan region of Rio de Janeiro. The data is composed of notifications sent by users through a phone app. Before being posted, the notifications are verified by local collaborators and also the information is screened using special filters for social networks. Besides the user collaboration, the platform also collects data from the media, police channels - such as the daily bulletins on the website of the Military Police of the State of Rio de Janeiro and its social networks -, and local communication networks.

FGV/DAPP filtered the data obtained from the platform Fogo Cruzado, removing duplicate reports or with addresses outside the coverage of the application. Next, the data was fed into a georeferencing software in order to circumscribe the locations inside the limits of the city of Rio de Janeiro, eliminating the ones located outside of the city. In order to check whether the geographic coordinates were correct, we carried out a manual inspection of addresses in a small sample of data on shootings.

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FGV

Founded in 1944, Fundação Getulio Vargas was born with the objective to promote the socioeconomic development of Brazil through the formation of qualified administrators, in the public and private sectors. Over time, FGV extended its acting to other areas of knowledge, such as Social Sciences, Law, Economy, History and, most recently, Applied Mathematics, becoming a reference in quality and excellency, with its eight schools.

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Fogo Cruzado

The application and collaborative map Fogo Cruzado was developed by Amnesty International as part of the campaign “Violence is not part of this game!” (“A violência não faz parte desse jogo!”), launched one month before the 2016 Summer Olympics in Rio to demand preventive measures to avoid human rights violations during the public safety operations in Rio de Janeiro. Since then, residents of the city and Metropolitan Region of Rio have had a means to bring visibility to the routine of shootings and armed violence which they live with.

The idea for the application came from autonomous research that registered shootings in Rio de Janeiro in the beginning of 2016, through information available in the press, police bulletins and social networks, in addition to the guidelines of the campaign, and it became a tool for the population most affected by the mentality of war to show, safely and anonymously, all the times when it is put in the middle of the “Crossfire” (“Fogo Cruzado”).

The application worked out so well in Rio that it is undergoing a transition phase and will be relaunched in the second semester, with coverage extended to other Brazilian metropolitan regions. But the intent remains the same: generating quality data, collaboratively, that can add to the debate on armed violence and encourage press coverage in areas scarcely covered in the past.

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