Understanding Toronto's Homicide Rates Through its Marginalized Neighbourhoods*

The correlation between increasing gun violence and economic disparity.

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Abstract

This paper looks at Toronto's homicide rates in order to determine a trend with violence and gun usage from 2013 to 2020. It will also determine which neighbourhoods have the highest murder rates. Findings indicate that the increase in violence disproportionately affects low-income neighbourhoods. Through literature references, this paper will also shed light on how homicide, gun violence, and neighbourhood makeup are correlated and play a role in systemic oppression.

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*Code and data are available at: https://github.com/cindykiml/Toronto-Homicide-Rates

1 Introduction

Canada's gun laws are strict and is federally controlled as owners requiring a permit to bear arms. Yet, homicide rates have been increasing in Toronto with shootings and gun violence as its leading cause (TPS 2021a). As a result, many Torontonians are becoming increasingly worried, especially after a record breaking number of 97 homicides in 2018 (McQuigge 2019). Police Chief Mark Saunders believes that the spike in gun violence is attributed to the increase of street gang activity (McQuigge 2019). Furthermore, he also believes that the growth in gang activity is due to increasing economic disparity (McGuffin 2020). Research has shown that most of Toronto's gang activity is located in its lower income neighbourhoods (McGuffin 2020).

University of Toronto professor, David Hulchanski conducted research on *The Three Cities Within Toronto* (2010). These three cities include high-income, middle-income, and low-income neighbourhoods. His team looked at 35 years worth of data to see long term income polarization trends within the city. The results show that economic disparity has increased at an alarming rate. Toronto's middle class has shrunk from 66% of the city in 1971 to 29% in 2005 (Hulchanski 2010). Hulchanski's research looked at more than income; he also gathered information on neighbourhood attributes such as, visible minority make up, education, and crime (Hulchanski 2010). Using Hulchanski's cross-sectional census research, I will be using it as a key literature piece to further understand Toronto's homicide rates and how it affects the city's most vulnerable.

In this paper, I use Toronto's open data catalogue to find information on homicide rates. I discuss the data source and implications the dataset may have considering it was created by Toronto Police Services. My goal is to explore the correlation between homicides, gun violence, and neighbourhood make up. I use homicide rates to look at the overall trend in murders and gun usage from 2013 to 2020. After, I will determine which neighbourhood has the highest homicide rates and look at the common themes these neighbourhoods share. In addition, I will see if my findings are consistent with Hulchanski's research.

2 Data

2.1 Data Source & Implications

The data used in this paper was taken from Toronto Open Data, a catalogue of datasets created by the City of Toronto to increase transparency and encourage data literacy (Gelfand 2020). This open data allows communities to engage in political conversations and raise awareness to policymakers and other citizens. The dataset I used was the Toronto Police's Annual Statistical Report on Homicides. The raw data includes homicide count from 2004 to 2020 for each neighbourhood and includes homicide type. This includes 'shooting,' 'stabbing,' and 'other.' The data also includes geo-spatial information that can be used to pin point specific homicide locations on a map. However, to protect the privacy of parties, the pin points are moved to the nearest intersection (TPS 2021a). As a result, homicide numbers by division or neighbourhood may be inaccurate as the exact number of homicides within geographical boundaries are not reflected (TPS 2021a). This means there is a possibility that this data could be biased depending on how much or little the police offset locations.

There are ethical implications to consider with this data. There is some ambiguity on what is considered a homicide case. The Toronto Police Open Data Documentation says that offences include first degree murder, second degree murder, and manslaughter (TPS 2021b). It also states, "Deaths caused by criminal negligence, suicide, or accidental or justifiable homicide (i.e self-defense) are not included." (TPS 2021b). It is difficult to determine 'justifiable' homicide as there are many factors to consider and it is based on court ruling.

Additionally, because this information was provided by Toronto Police Services, it is subject to immense ethical violations. As seen with recent protests demanding more accountability from police institutions worldwide, there is a great lack of transparency when it comes to police brutality and racism within the force. Therefore, it is important to question whether homicide at the hands of the police are considered in this dataset, or if they would rule such cases as 'self-defense' and exclude it.

Another factor that could influence the dataset is whether or not the courts have decided on a ruling for homicide cases. There are cases that could be ongoing or verdict-less. Therefore, the number of deaths from homicide could not be accurately represented per year if cases are still awaiting trial.

2.2 Methodology

The materials used in this paper is `R` (R Core Team 2021), `knitr` (Xie 2021), `Open Data Toronto` (Gelfand 2020), `tidyverse` (Wickham 2021), `ggplot2` (Wickham, Chang, et al. 2021), `dplyr` (Wickham, François, et al. 2021), `janitor` (Firke 2021), and `bibtex` (Francois 2020). I began by downloading the data from Open Data Toronto, then cleaning and extracting it. I wanted to look at data from the most recent years so I filtered the data to only show cases from 2013 to 2020. My plan was to analyze Toronto homicides by each type first, then look at which neighbourhoods had the highest rates. First, I created a table that focused on the types of homicides in Toronto and the total count throughout the years. Since the raw data did not include a total number per year, I added a new column that contained the sum of shooting, stabbing, and other homicides (Table 1). I plotted this onto a stacked bar graph to visualize the changes over the years and see which type had the highest frequency (Figure 1). After, I extracted a new data frame with the number of homicides from 2013 to 2020 for each Toronto neighbourhood. I created a new 'Total' column which contained the sum of deaths for each neighbourhood. Then, I ordered the 'Total' column from smallest to greatest and found the six neighbourhoods with the highest counts. Next, I formatted this into a table and graph to visually show the top six neighbourhoods with the highest number of homicides over the eight years (Table 2)(Figure 2).

2.3 Homicide Types & Rates

Table 1: Number of Homicides by Type in Toronto from 2013 to 2020

	Other	Shooting	Stabbing	Total
2013	21	22	14	57
2014	15	27	16	58
2015	15	26	18	59
2016	25	41	9	75
2017	15	39	11	65
2018	26	51	20	97
2019	19	44	16	79
2020	15	38	18	71

Starting from 2013, the number of homicides steadily increase with a spike in 2018 where there was a total of 97 homicides. The years after show a slight decline, with 2020's total being 71. Perhaps the slight decrease of homicides in 2020 was due to the pandemic and lockdowns. One thing that remains consistent is that shooting related deaths have continually dominated homicide causes. In fact, it has increased over the years which can be an indicator that gun violence in Toronto is on the rise.

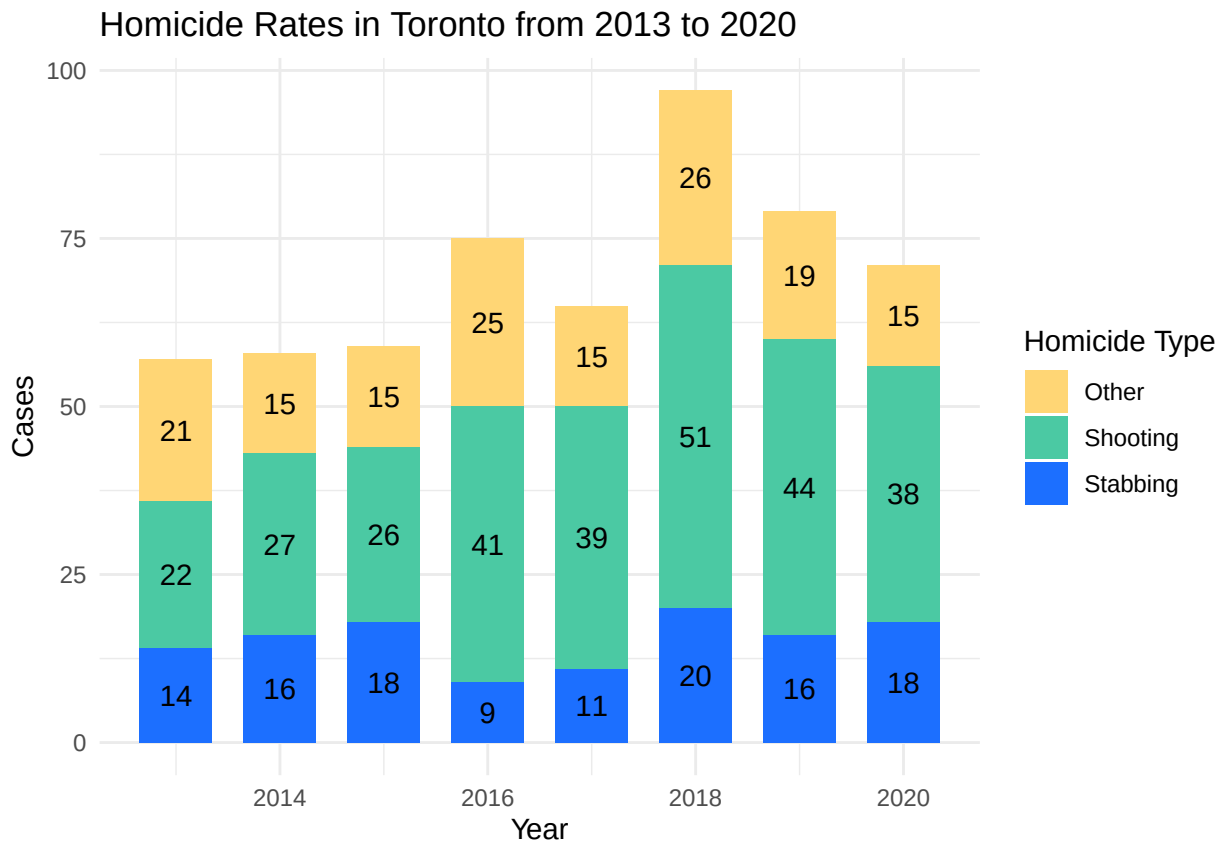

Figure 1: Homicide type cases in Toronto per year

2.4 Neighbourhoods

Table 2: Greatest Homicide Counts in Toronto's Neighbourhoods from 2013 to 2020

	2013	2014	2015	2016	2017	2018	2019	2020	Total
Waterfront Communities-The Island (77)	1	1	1	0	2	3	1	3	12
West Humber-Clairville (1)	0	0	3	4	0	2	2	3	14
Weston (113)	2	1	0	4	1	1	2	3	14
Bay Street Corridor (76)	1	1	4	1	0	3	4	1	15
Mount Olive-Silverstone-Jamestown (2)	2	2	3	1	0	2	3	2	15
Moss Park (73)	3	1	1	3	4	4	3	2	21

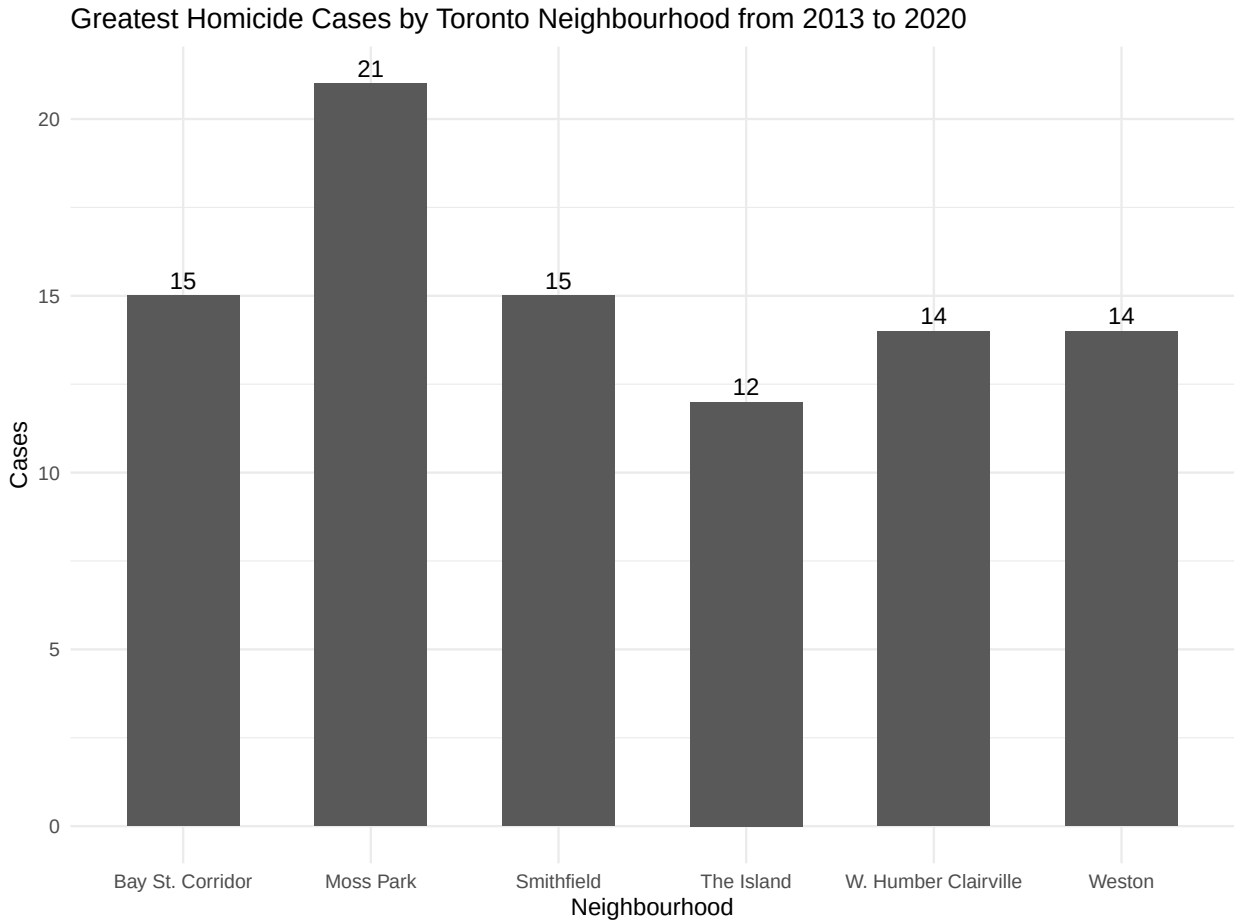

Figure 2: Top six beighbourhoods with the largest culmulative homicide cases

The top six neighbourhoods with the highest homicide counts are *Bay St. Corridor*, *Moss Park*, *Mt. Olive-Silverstone-Jamestown* also known as *Smithfield*, *The Island*, *West Humber Clairville*, and *Weston*. Moss Park is at the top of the list with 21 homicide cases throughout the eight years. As a result, we can deduce that violence, especially gun violence is above average in these areas.

3 Discussion

3.1 Rising Gun Violence in Toronto

As seen in Figure 1, in recent years, homicides due to gun violence is greater than 'other' and 'shooting' combined. Therefore, it is within reason to assume that this trend will only continue into the future. According to an article by the National Post, a large contributing factor is due to "gun culture" from the United States (Humphreys 2021). As a result, more guns are being smuggled across the border with an alarming statistic of 80% of guns being traced back to the United States (Humphreys 2021).

In a 2019 press conference, Police Chief Saunders stated, "the city's recent gun violence has been connected to gang activity" (McGuffin 2020). A significant amount of Toronto shootings has been due to gang culture which centers on illegal drug trade (McGuffin 2020). It is important to note that this activity usually takes place in the city's poorest neighbourhoods. Many officials believe that the increasing economic inequality is fueling the rise in gang activity (McGuffin 2020). The cost of living in Toronto has grown dramatically, making it difficult for residents to make ends meet. This is consistent with my findings as four out of six neighbourhoods with the highest homicide rates are located in Toronto's poorest areas (See sub-section 2.4). Moss Park, Smithfield, West Humber Clairville and Weston are classified as low-income neighbourhoods (Hulchanski 2010). As for the remaining two, there is no income information for The Island, and Bay Street Corridor is the core of Downtown Toronto, where it is the most dense and busy which can explain why homicide rates are so high. Gun violence will only continue to increase unless we address the connecting social issues. As Hulchanski predicts, low-income neighbourhoods will increase to 60% of Toronto's makeup by 2025 which will contribute even further to violence within the city (Hulchanski 2010).

3.2 Marginalized Neighbourhoods

The trend seen with increasing homicides is the same one that can be seen with the increase of low income neighbourhoods. Middle income neighbourhoods have decreased significantly while low income neighbourhoods continue to rise (Hulchanski 2010). By 2005, more than 53% of Toronto neighbourhoods were low-income as compared to 19% from 1971 (Hulchanski 2010). Therefore, this supports the correlation between increasing violence and economic inequality in Toronto as believed by the Toronto Board of Health (McGuffin 2020). Furthermore, Hulchanski's research shows that 68% of low-income neighbourhood residents are visible minorities (Hulchanski 2010). This is no mere coincidence but rather an indicator that poverty in Toronto is racialized. Within these same neighbourhoods, we also see the highest homicide numbers (See sub-section 2.4). Therefore, we can interpret that violence, more specifically gun violence, disproportionately affects minorities, lower income residents, and those living in poverty.

In an interview with the Toronto Star, Hulchanski states, "Money buys choice. And People with the most choice are choosing to live in certain areas." (Contenta 2018). This brings attention to the greater problem of systemic racism and how it enables white people and the affluent to live in high income neighbourhoods while continually pushing out marginalized groups. For example, Hulchanski's studies show that residents of low-income neighbourhoods have relatively high levels of education (Contenta 2018). Yet, half of the city's average gross income is $32,000, a price that makes living in Toronto extremely difficult (Contenta 2018). Therefore, it is appropriate to assume that there is a lack of housing and job opportunity due to discrimination.

4 Conclusion

Urban crime does not exist in a vacuum, there are a multitude of factors that are inextricably intertwined and contribute to the problem. Only by analyzing the nodes of this network are we closer to understanding the pattern of Toronto's homicide rates and its continual increase. The solution is not as simple as banning guns in order to decrease gun violence and homicides. More research on the inter-connectedness of neighbourhood

makeup, racial and economic inequality needs to be conducted in order to get to the root cause of increasing homicides within the city.

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