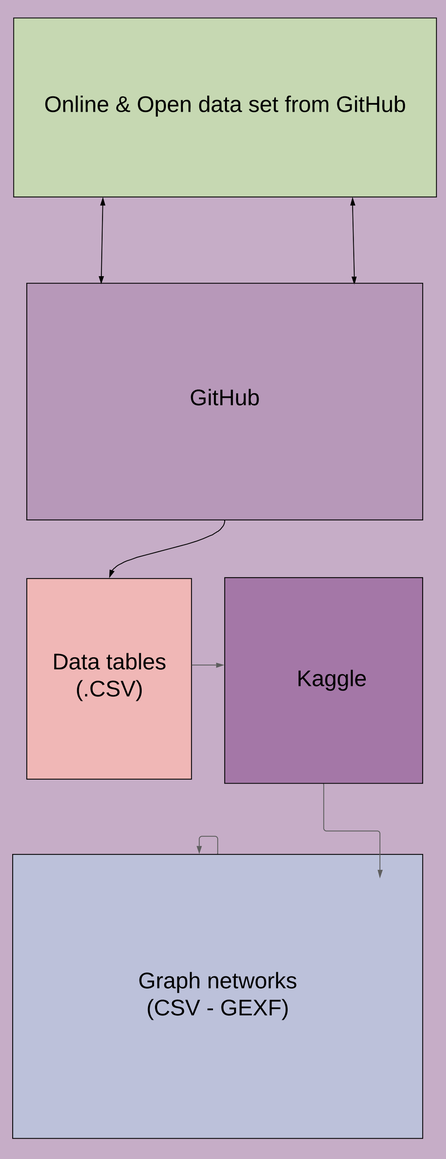
Gun Violence in America

DH 100 Theory and Methods - Dr. Anderson | Melissa Iglesias | 6/6/21

Collection Process



https://github.com/jamesqo/gun-violence-data

Why study Gun Violence?

The United States is no stranger to violence, more specificailly, gun violence. Every year, thousands of police reports are filed due to reports of armed shootings. Armed shootings happen in many different circumstances and communities, whether that be in a mass setting or more oriented around local crime. Using data collected on gun violence, the purpose of this storyboard is to analyze where and when the most cases of gun violence happen in order to be able to make future predictions on gun violence.

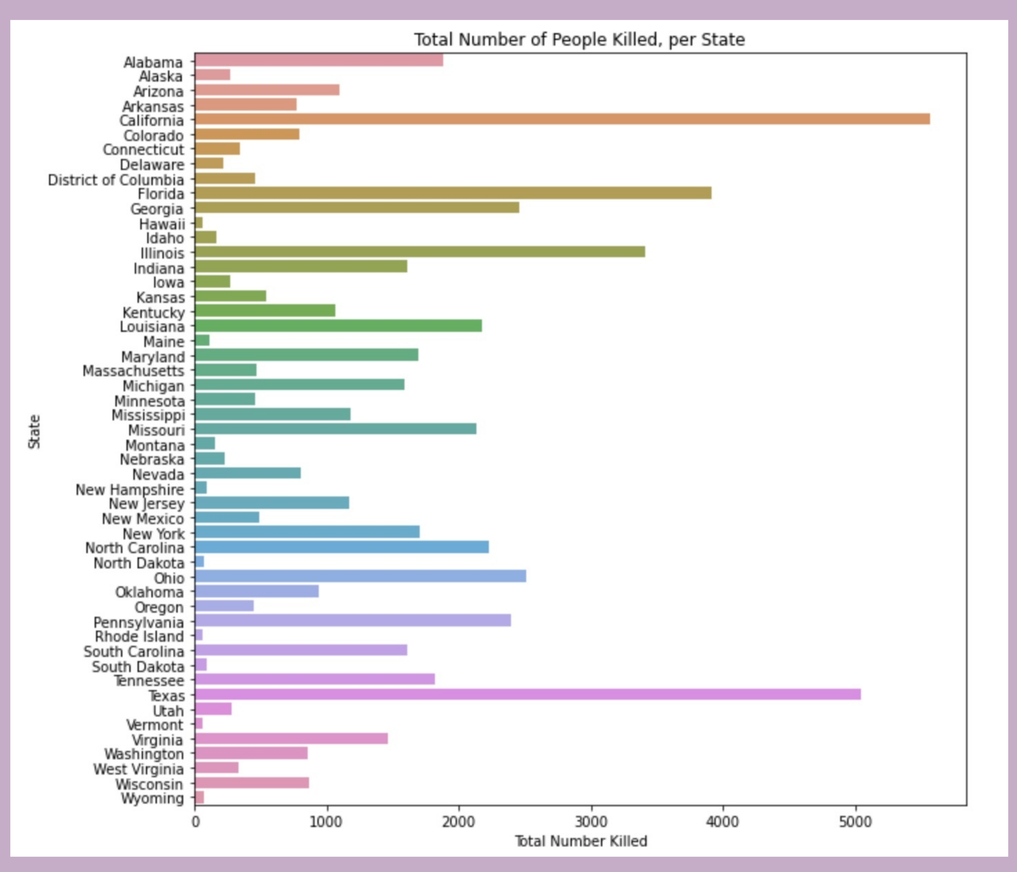
Descriptions:

This particular data set consists of incident reports from across the United States pertaining to instances where a gun was used to elicit violent behavior. In this data set, we can also see if the weapon was stolen, the type of weapon, and the type of injury inflicted on the victims, uncluding death. Age, location, gender, and name are also available. This data set contains values from 2013 to 2018, with years 2013 and 2018 being incomplete due to collection issues.

Research Questions and Hypothesis:

Through these data, we want to answer the following questions: "Where and when can we expect the most gun violence to happen?" and "Has there been any incline in the number of deaths or injuries due to gun violence?"

I believe the data will show a general increase in both deaths and injuries, and that armed shootings will be more common in more dense populations.



Source of Research:

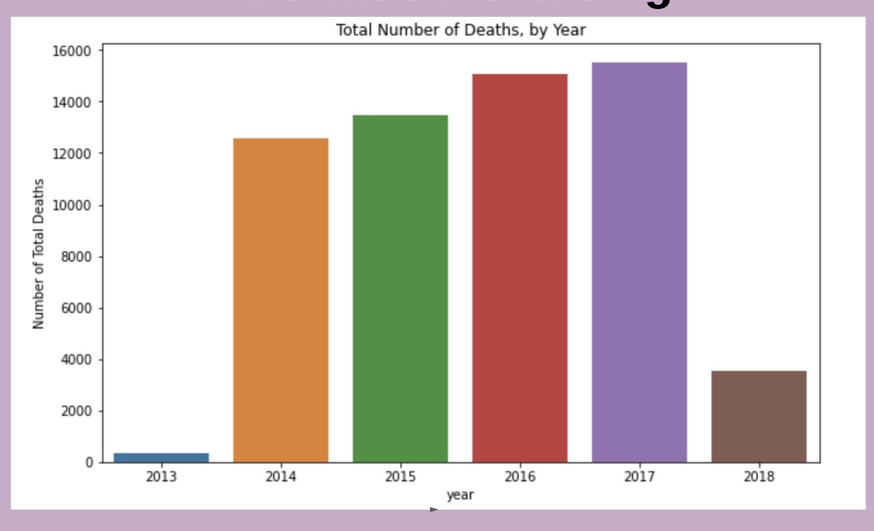
In order to conduct this reasearch, a gun violence repository was taken from GitHub.com . The data was then moved onto Kaggle, where pandas and matplotlib were downloaded and utilized in order to create visulaizations of the data. The orginal data set served at the main data frame and additional charts were produced to focus on specific years and states. This allowed for a closer look at trends in certain areas, as well as any possible trends over time.

What does the data look like?

```
[29] map.head()
```

	incident_id	date	state	city_or_county	address	n_killed	n_injured	incident_url	source_url
0	461105	2013-01-01	Pennsylvania	Mckeesport	1506 Versailles Avenue and Coursin Street	0	4	http://www.gunviolencearchive.org/incident/461105	http://www.post-gazette.com/local/south/2013/0...
1	460726	2013-01-01	California	Hawthorne	13500 block of Cerise Avenue	1	3	http://www.gunviolencearchive.org/incident/460726	http://www.dailybulletin.com/article/zz/201301...
2	478855	2013-01-01	Ohio	Lorain	1776 East 28th Street	1	3	http://www.gunviolencearchive.org/incident/478855	http://chronicle.northcoastnow.com/2013/02/14/...
3	478925	2013-01-05	Colorado	Aurora	16000 block of East Ithaca Place	4	0	http://www.gunviolencearchive.org/incident/478925	http://www.dailydemocrat.com/20130106/aurora-s...
4	478959	2013-01-07	North Carolina	Greensboro	307 Mourning Dove Terrace	2	2	http://www.gunviolencearchive.org/incident/478959	http://www.journalnow.com/news/local/article_d...

Are trends increasing?



We can see that over time, the total number of deaths has continues to increase between the years 2014-2017. Unfortunately, both the 2013 and 2018 data were incomplete, thus accounting for the statistically significant difference in death rates.

How is Gun Violence spread across the US?

Taking a look at the map, we can see that a large portion of the gun-violence incidents between 2014-2018 was largely centralized on the East Coast, however, the West Coast also seems to have high rates of gun-violence as well. While we cannot say where the most gun violence happens, having a map to demonstrate the distribution of the incidents helps us visualize the severity of the concentration of gun violence in the United States.

Interpretation:

When thinking about where gun violence seems to be most present, we can see that California has a higher death rate of gun shootings, which might be due to population size. However, we also see similar rates in Texas, Florida, and Illinois. Interestingly, Illinois has roughly 1/3 of the population of California, however, still has the third highest death rate. The number of total deaths in Illinois is alarmingly high compared to other states of its size.

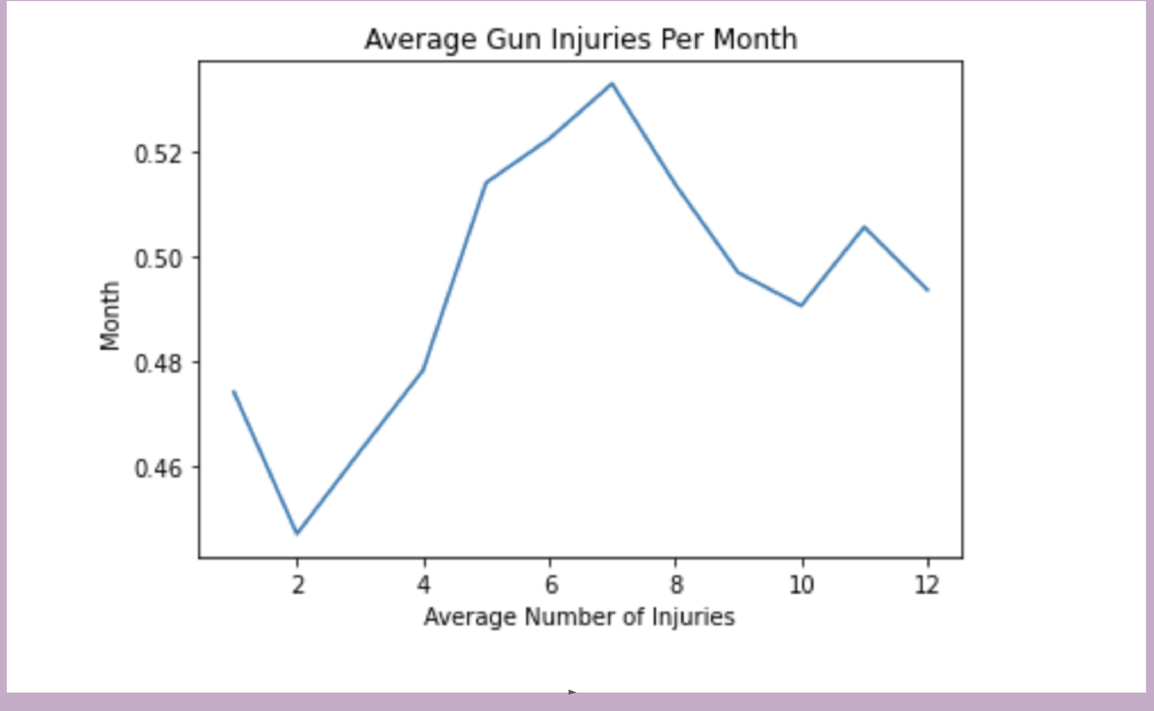
We are also interested in seeing any possible trends that can help us indicate implications for the future. The data shows an increasing trend in deaths per year, which may continue to increase over time.

Discussion of your results:

In our first visualization, we can see that California had the highest amount of total deaths from 2013- 2018. Close in second, Texas also had a similar total death rate. Suprisingly, Illinois had the third highest death rate out of the nation, despite only having a portion of population that resides in states like California and Texas. The higher rates in Illinois may be due to communal violence and poverty.

In the second visualization, we can see that in 2017, the most people were killed in a case of gun-violence. Interestingly, the number of deaths between 2014-2017 appeared to steadily increase over time, with the 2018 data being incomplete.

In our third visualization, we can see that the most gun-related injuries happen in warmer months such as Februrary through July. Though the data, we cannot locate an exact cause for this increase, however, the increase might be explained through the higher rates of outdoor and activies that are usually available in the warmer months.



When do we see the most gun violence happen?

Based on the data, we can look at the average number of injuries that happern per month, in order to evaluate any sharp increases in particular months. Looking at the figure below, there seems to be a larger number of reported injuries beginning from Februrary and peaking July. The higher number of reported shootings might be due to warmer weather that allows for people to gather in larger crowds during the summer and partake in ourdoor activies. The trend then begins to slow down before hitting another peak in November. However, the data is not enough to correlate gun violence with warmer temperatures. Seeing that July has the most injuries due to gun violence on average, might help us to figure out future trends.

Conclusions

Taking a broader look at gun violence, we can see that there are general trends that may have possible implications. In larger states, there is a higher number of deaths reported and we see that in warmer months, we see the most number of injuries due to gun violence.

While it is difficult to pinpoint a reason for the higher rates of gun-violence, it might be helpful to examine poverty rates and communal violence in cities and states that often struggle with these same issues to find the underlying causes.

Work Cited:

1.) Qo, J. (2018).*jamesqo/gun-violence-data*. GitHub. https://github.com/jamesqo/gun-violence-data.

2.) Cook, A. (2021, June 3).*Bar Charts and Heatmaps*. Kaggle. https://www.kaggle.com/alexisbcook/bar-charts-and-heatmaps.

3.)QaswedQaswed 2. (1967, December 1).*How to plot two variables on two different y-axes in python?*Stack Overflow. https://stackoverflow.com/questions/55847933/how-to-plot-two-variables-on-two-different-y-axes-in-python.