Police Shootings

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Problem Statement

1. What are the **demographics of people** most likely to be in a police shooting?

2. What other **factors** (income, poverty, education, mental illness) have a significant impact? What don't?

About the Data...

Washington Post Fatal Force Dataset provides data about about each police-involved killing in the United States in 2015

Has approximately **8000 incidents**
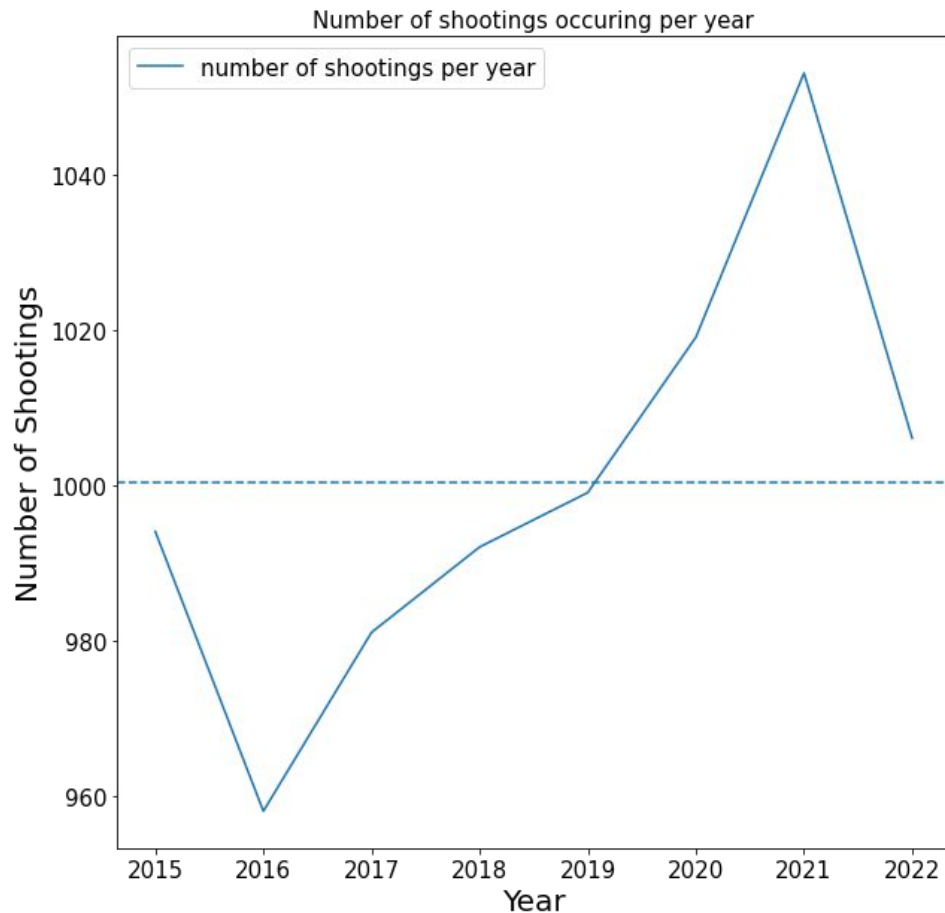
This data includes:
- City and State of Incident
- Race, gender, and age of the deceased
- Whether the person was armed
- Whether the person was experiencing a mental-health crisis

Also used data from **2010 Census...**

How does 2015 compare to other years?

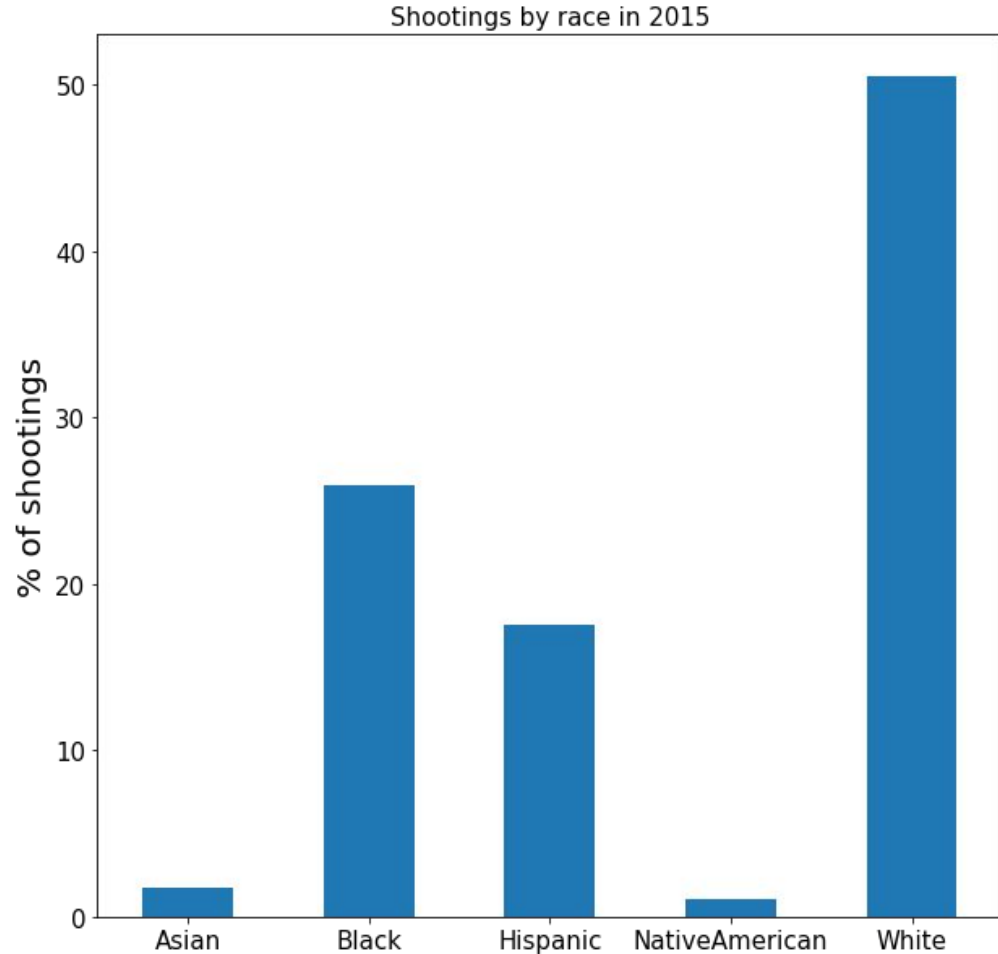On average, there were 1000 shootings per year:

- 2015 was roughly average
- 2021 had the highest number of shootings per year
- Although variation seems dramatic, the largest gap is less than 100 shootings

Number of shootings occuring per year

Demographics

Is race a factor in fatal shootings?

At first glance: White people make up the majority of fatal shootings (around 50% of incidents).

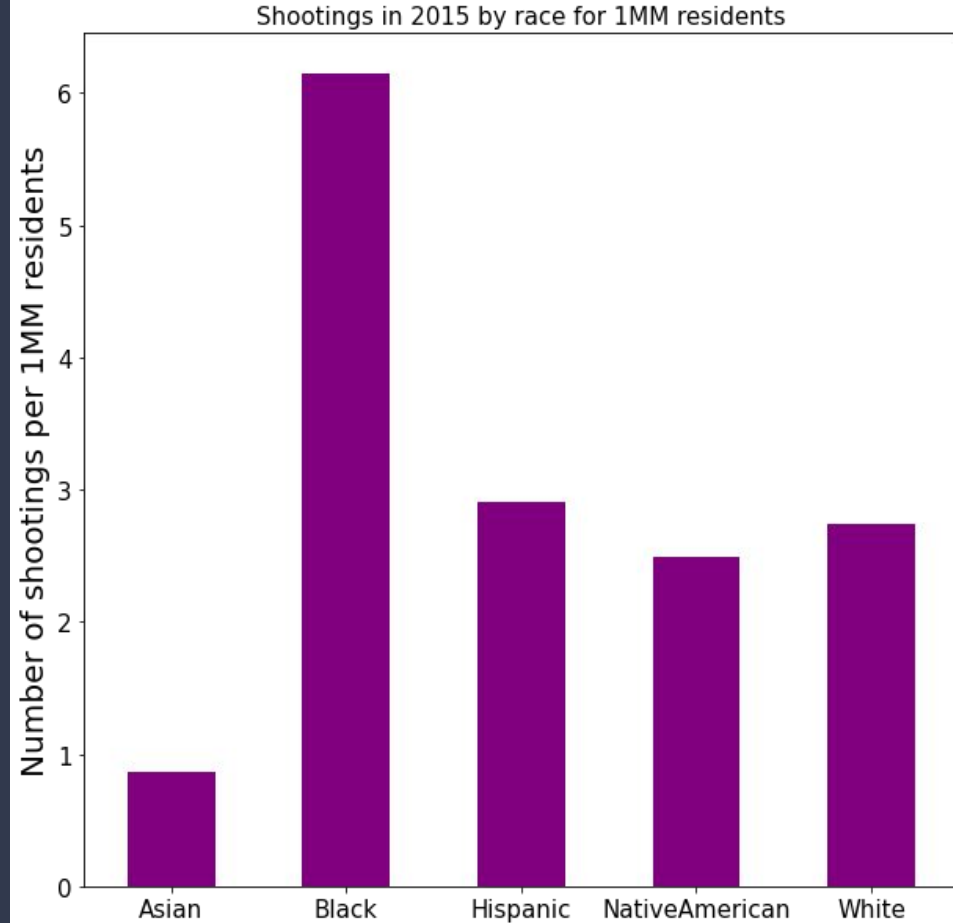# Is race a factor in fatal shootings?

But when comparing to the US population:

- Black people are more likely to be involved in a fatal shooting: **6.1 incidents/1MM people**

- White people: **2.7 incidents/1MM people**

Yes, race is a factor.

Shootings in 2015 by race for 1MM residents
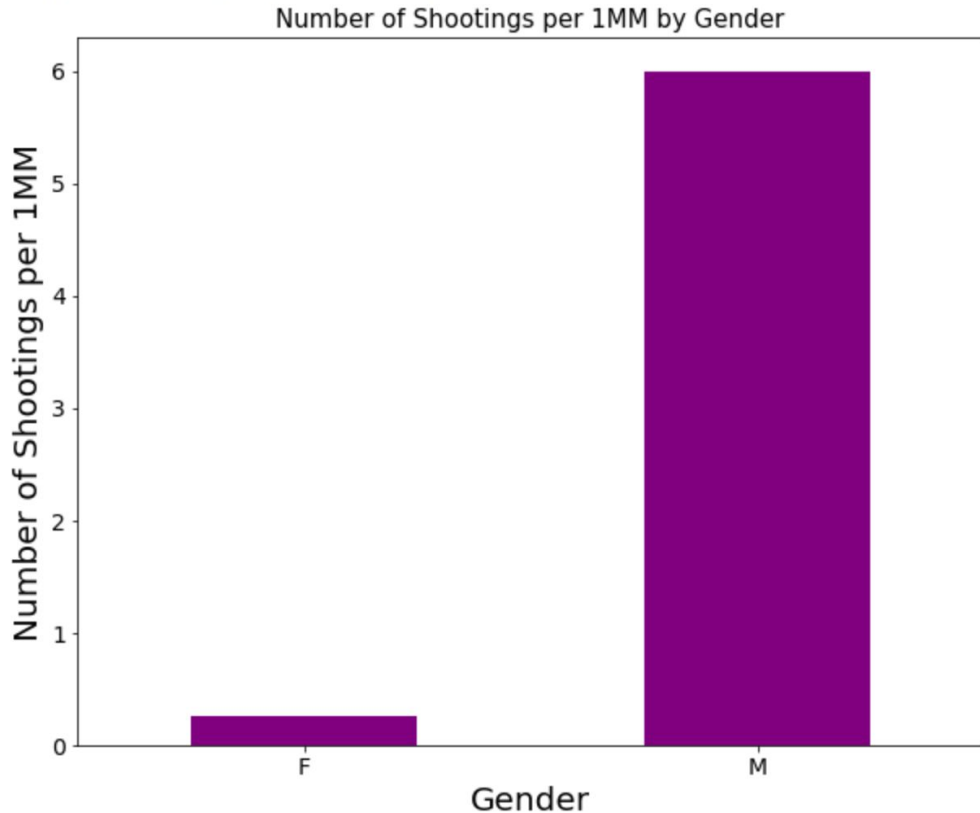
Does **gender** have an impact?

In the US: 50.8 percent of the population is female and 49.2 percent is male.
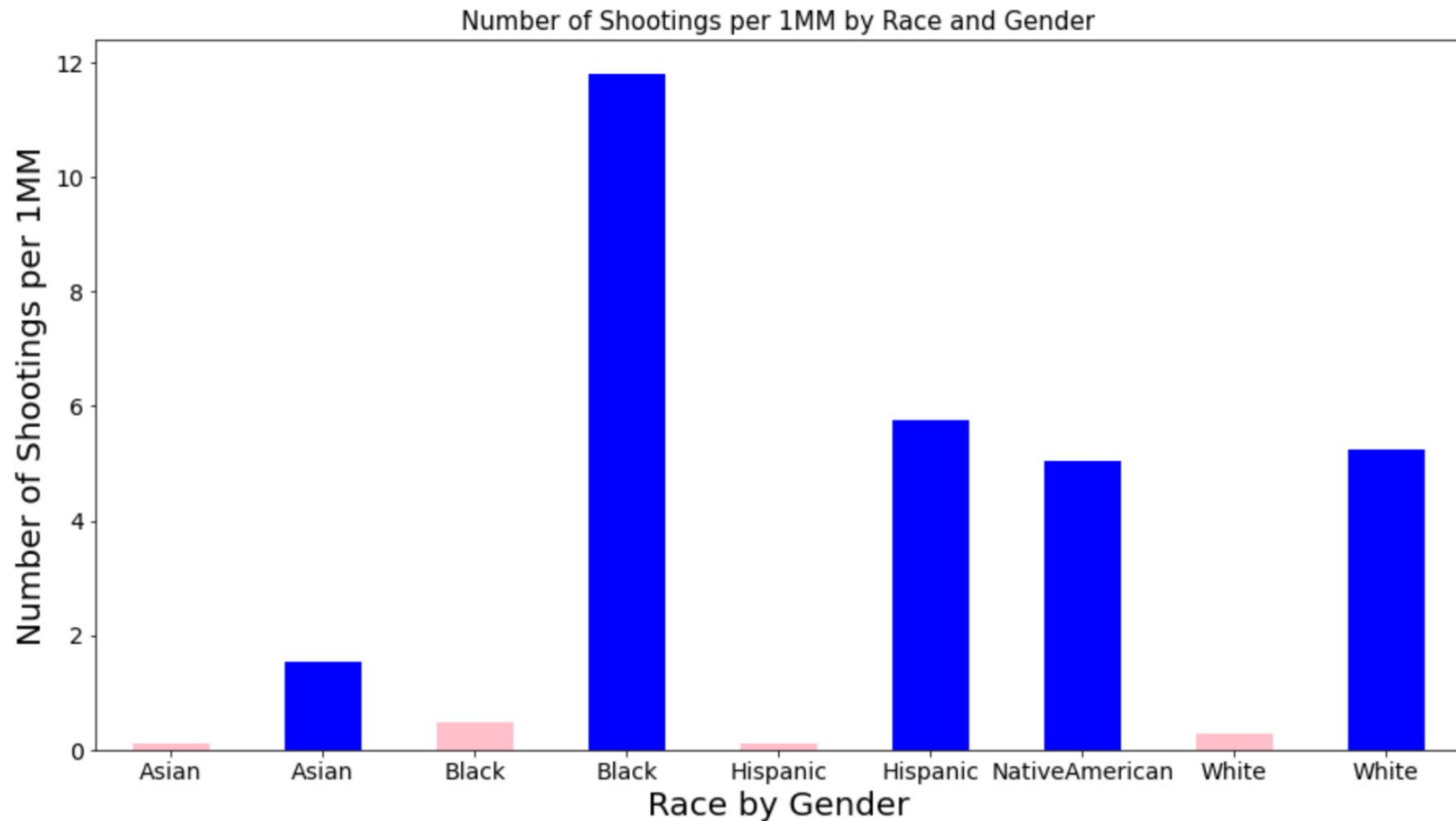
Here, women are underrepresented.
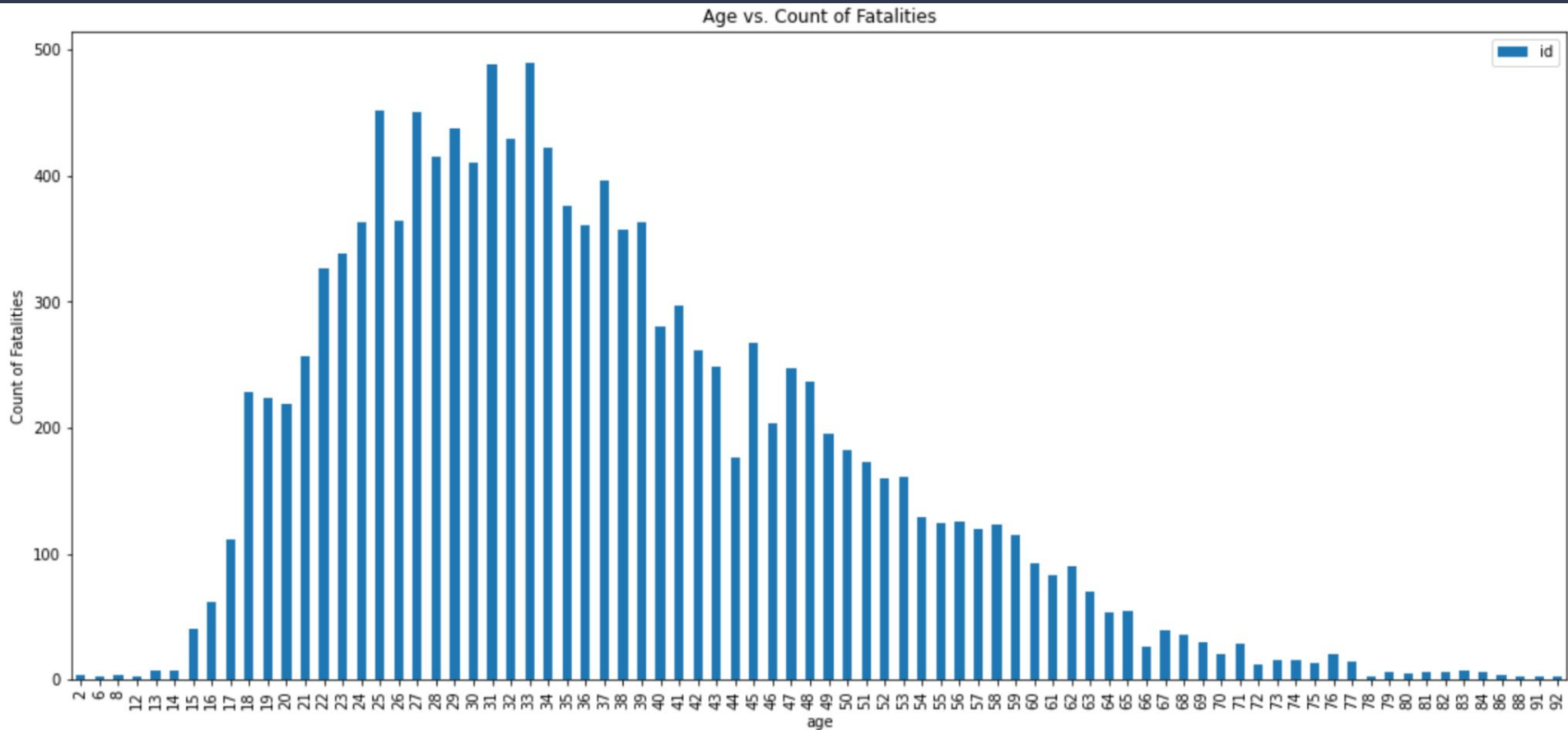
Women: **0.3 /1MM people**
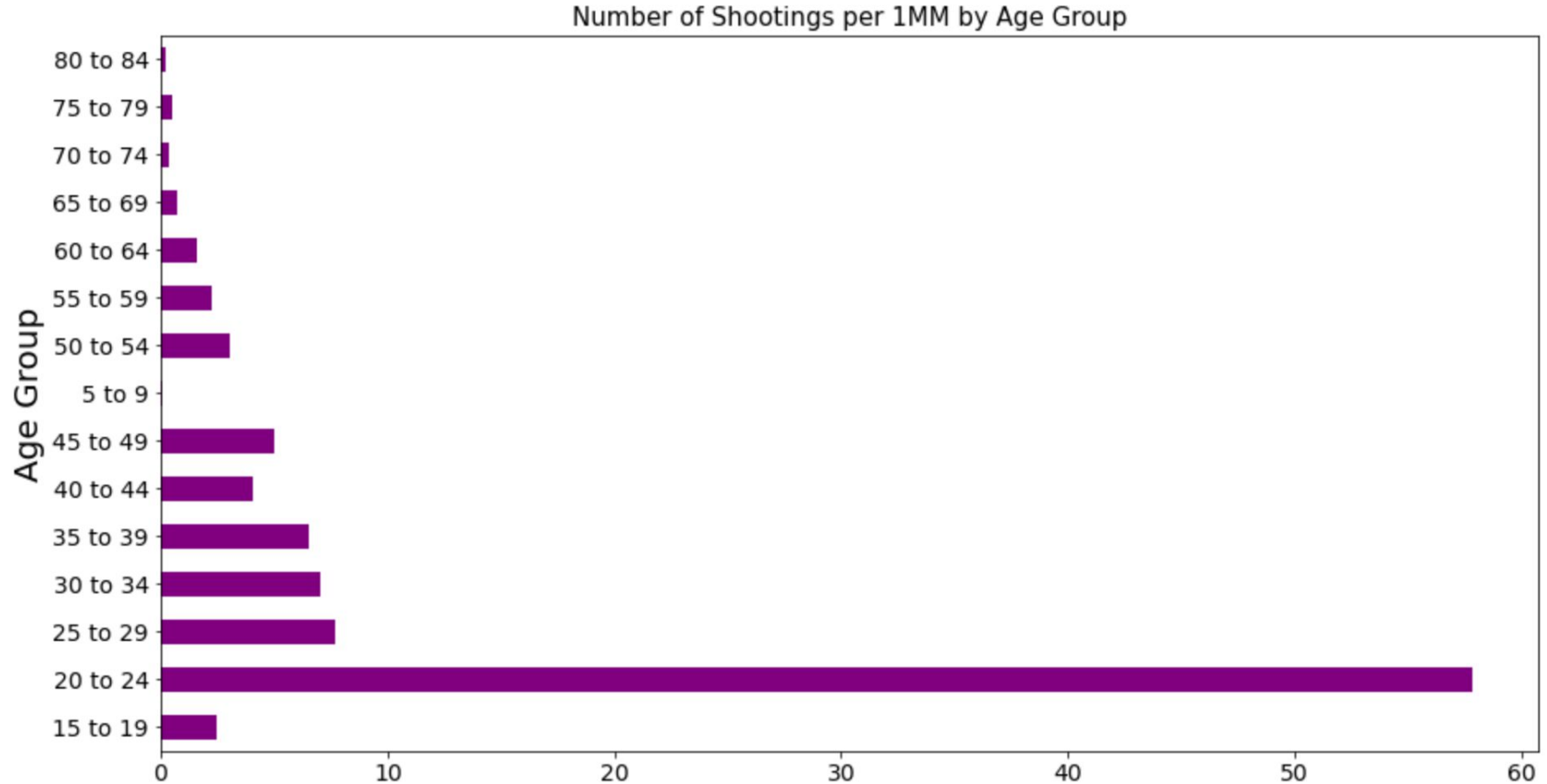
Men: **6/1MM people**

So yes, gender has an impact!

Number of Shootings per 1MM by Gender

Let's look at both Race and Gender....

Number of Shootings per 1MM by Race and Gender

What about age...?

Age vs. Count of Fatalities

Now let's factor in population...

Number of Shootings per 1MM by Age Group
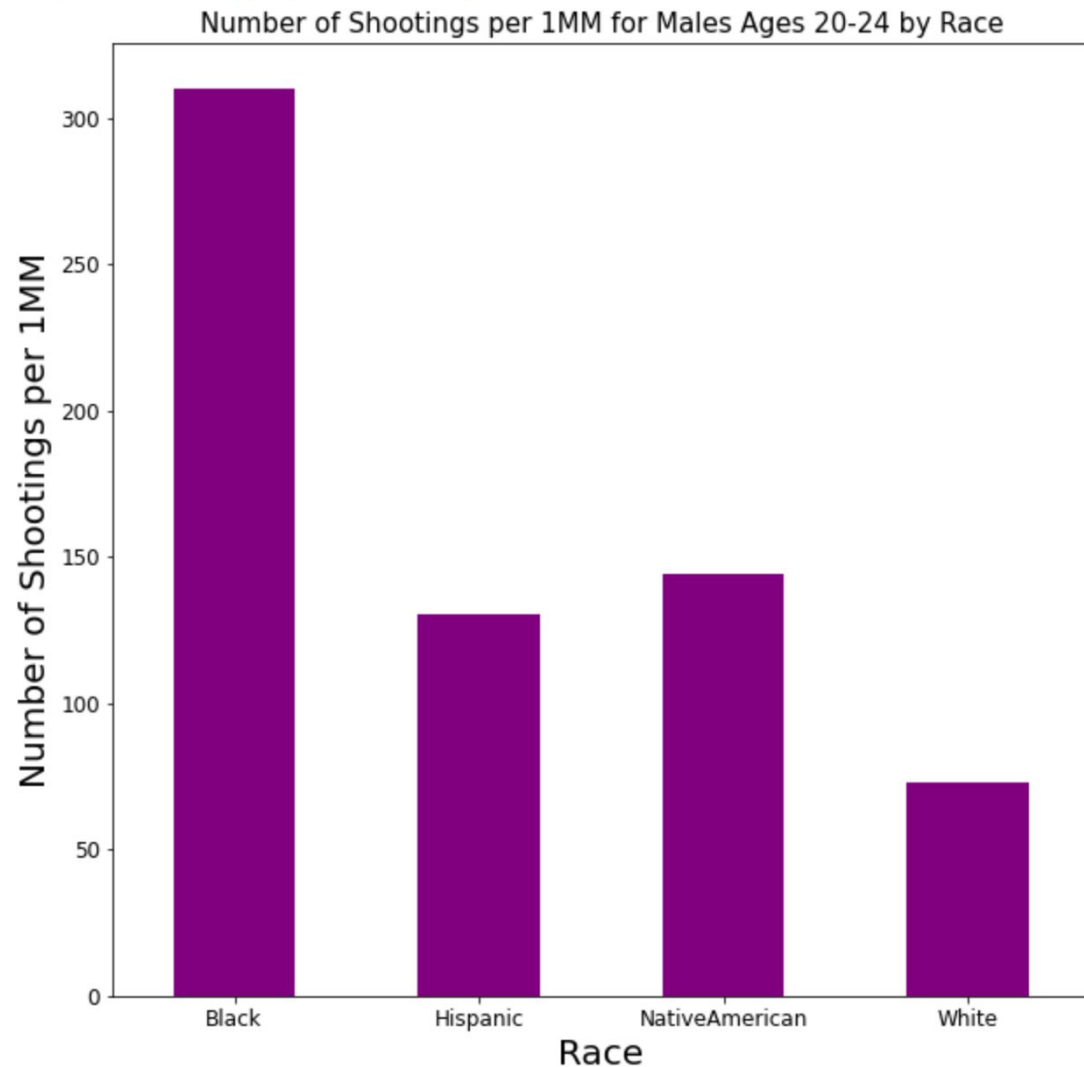
So now let's combine race, gender, and age...

For men between the ages of 20-24:

- Black: **304/1MM people**

- Native American: **144/1MM people**

- Hispanic: **130/1MM people**

- White: **72/1MM people**

Number of Shootings per 1MM for Males Ages 20-24 by Race

Demographics Profile

Someone who is most likely to be the victim of a police shooting:

- Race is **Black**

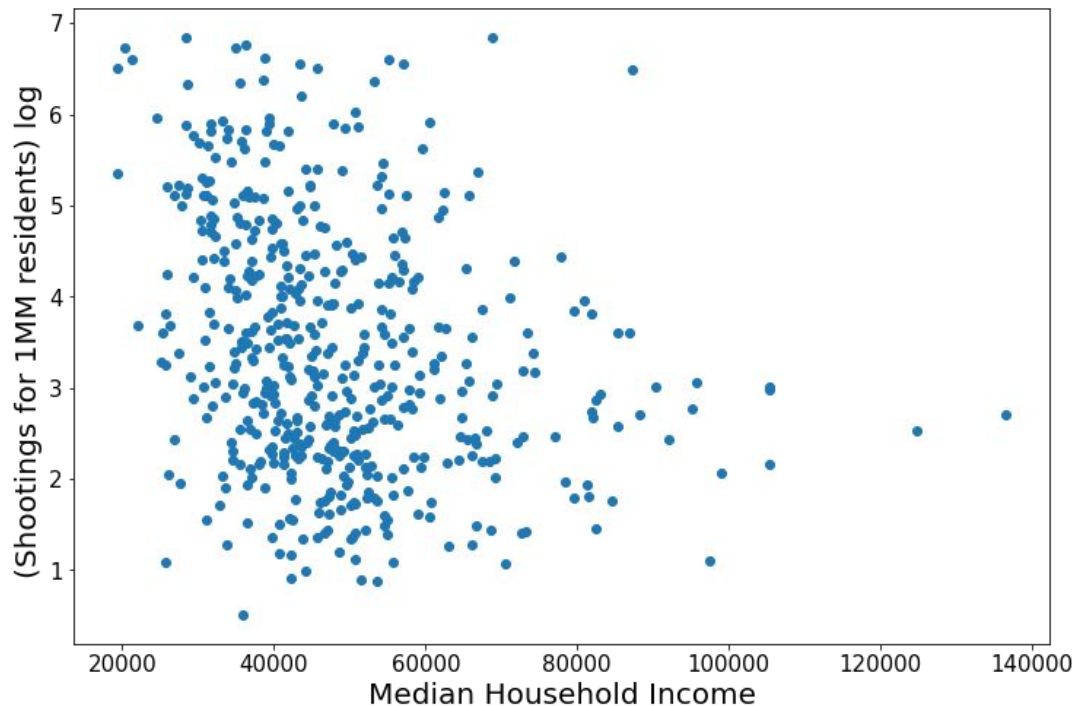- Gender is **male**

- Age is between **20-24**

Additional Factors

Median Household Income

Methodology: Compared the number of shootings per 1MM residents by cities to the median household income.

- Correlation: -0.20

- Cities with lower household income have slightly more shootings
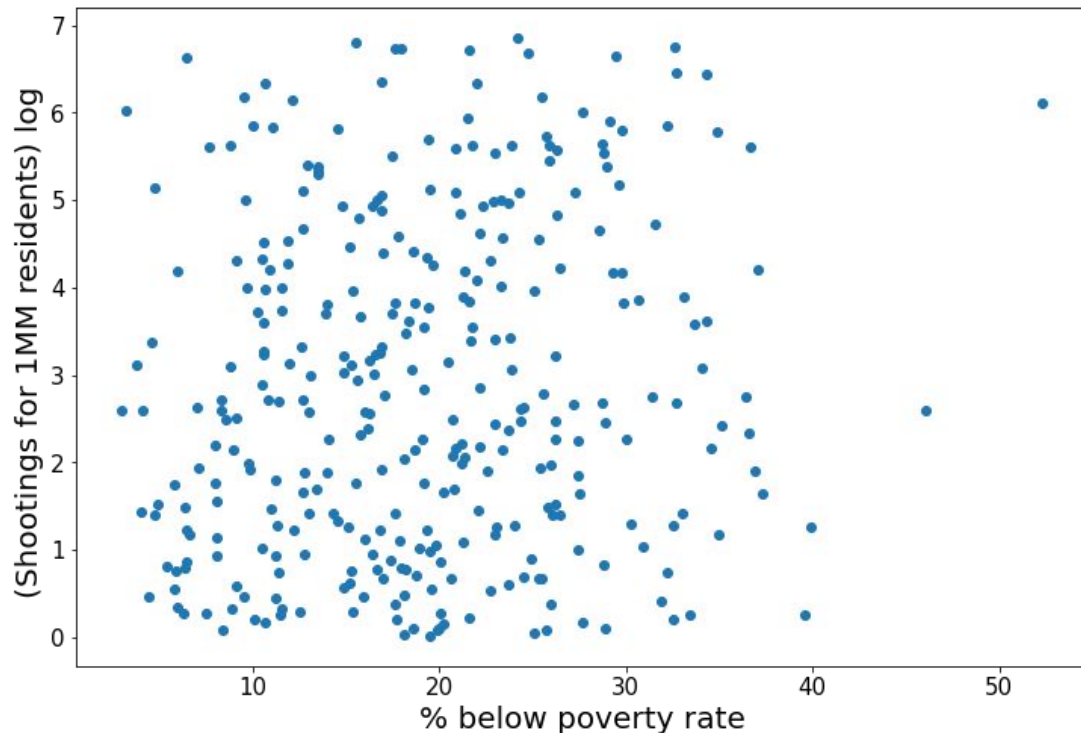
- Victims' median household income?

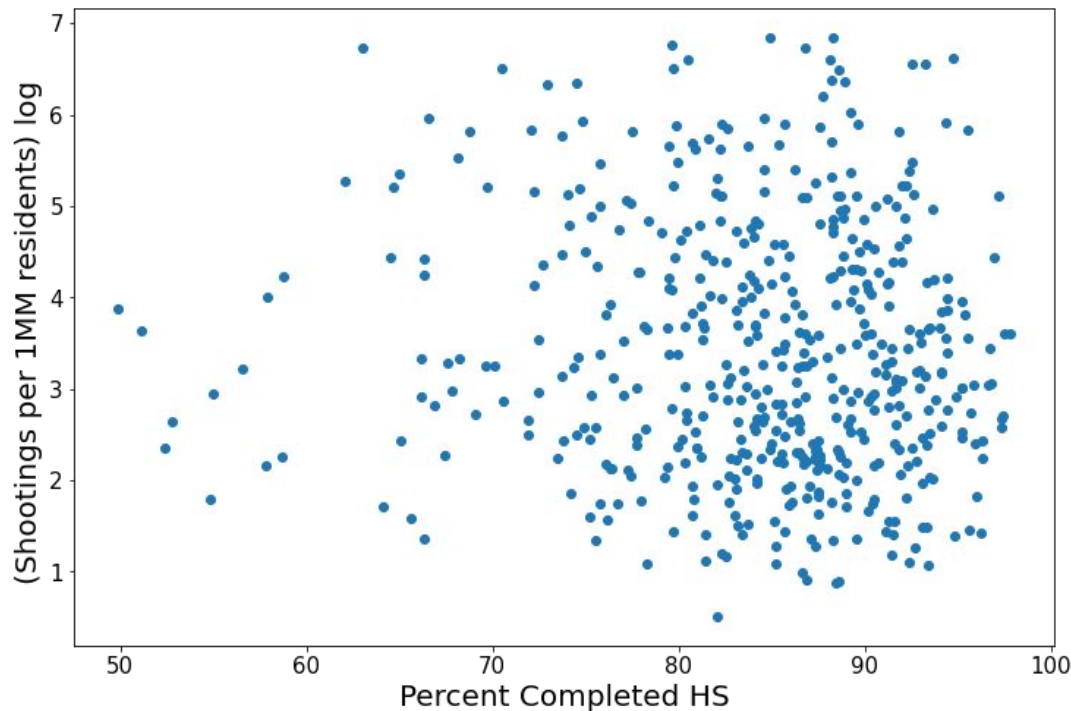**So median income may have an impact.**

Poverty Rate

- Correlation between shootings and cities' poverty rate: 0.12.

- → Weak correlation

- The poorest city was at 52.3%, and most shootings happened in a wide range: from 10% to 30%.

- Neighborhood's poverty rate?

So the percentage of population below the poverty rate is not a factor.
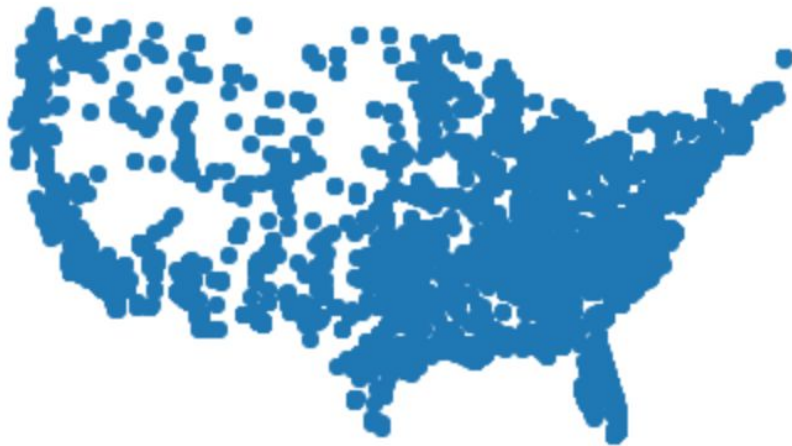
Education

- Data follows nationwide data: 87.6% of the US population 25 or older in 2011 held a HS diploma

- Education **does NOT** have a strong correlation with the percentage of fatalities in each city
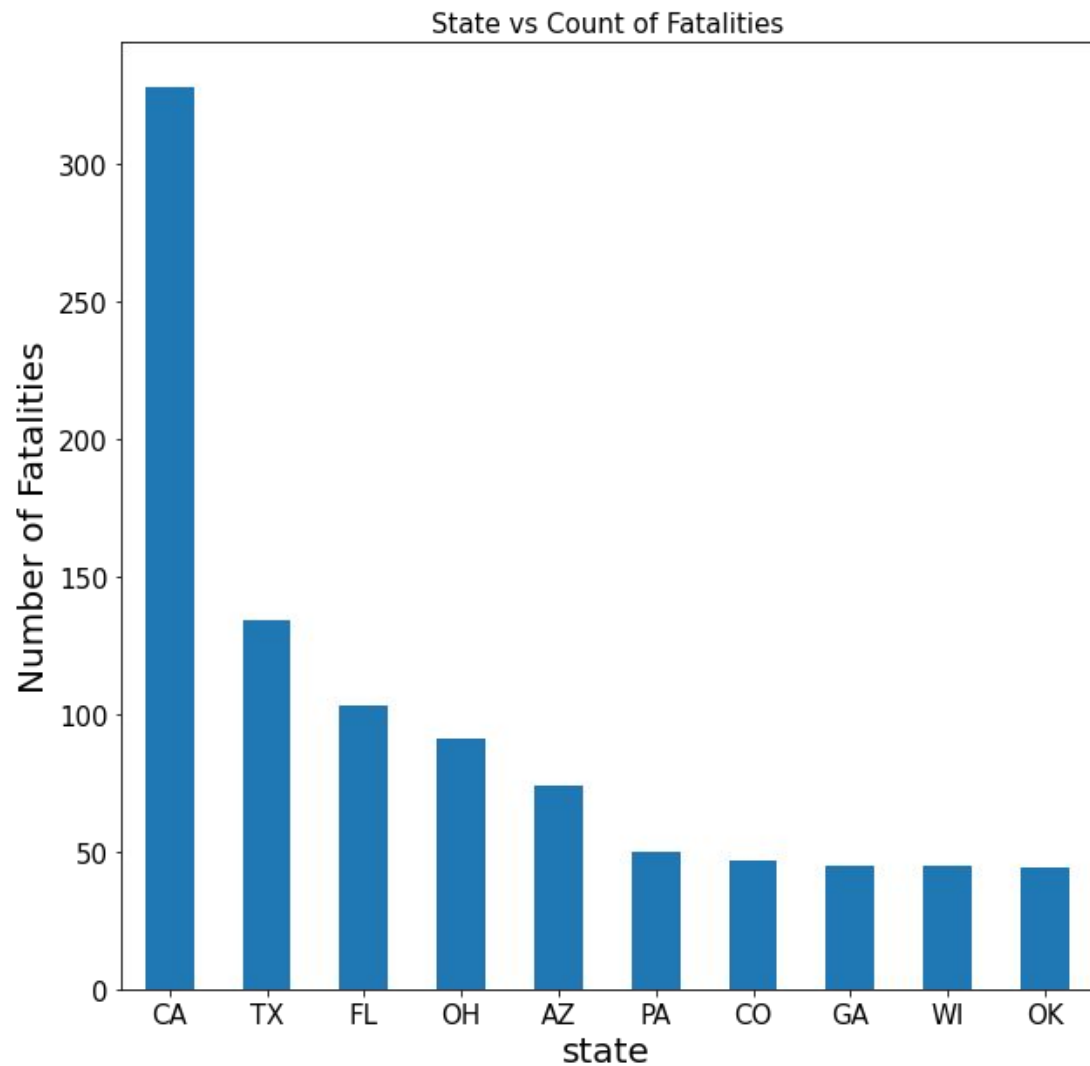
- Correlation: -0.05

Does location matter?

Breakdown by State

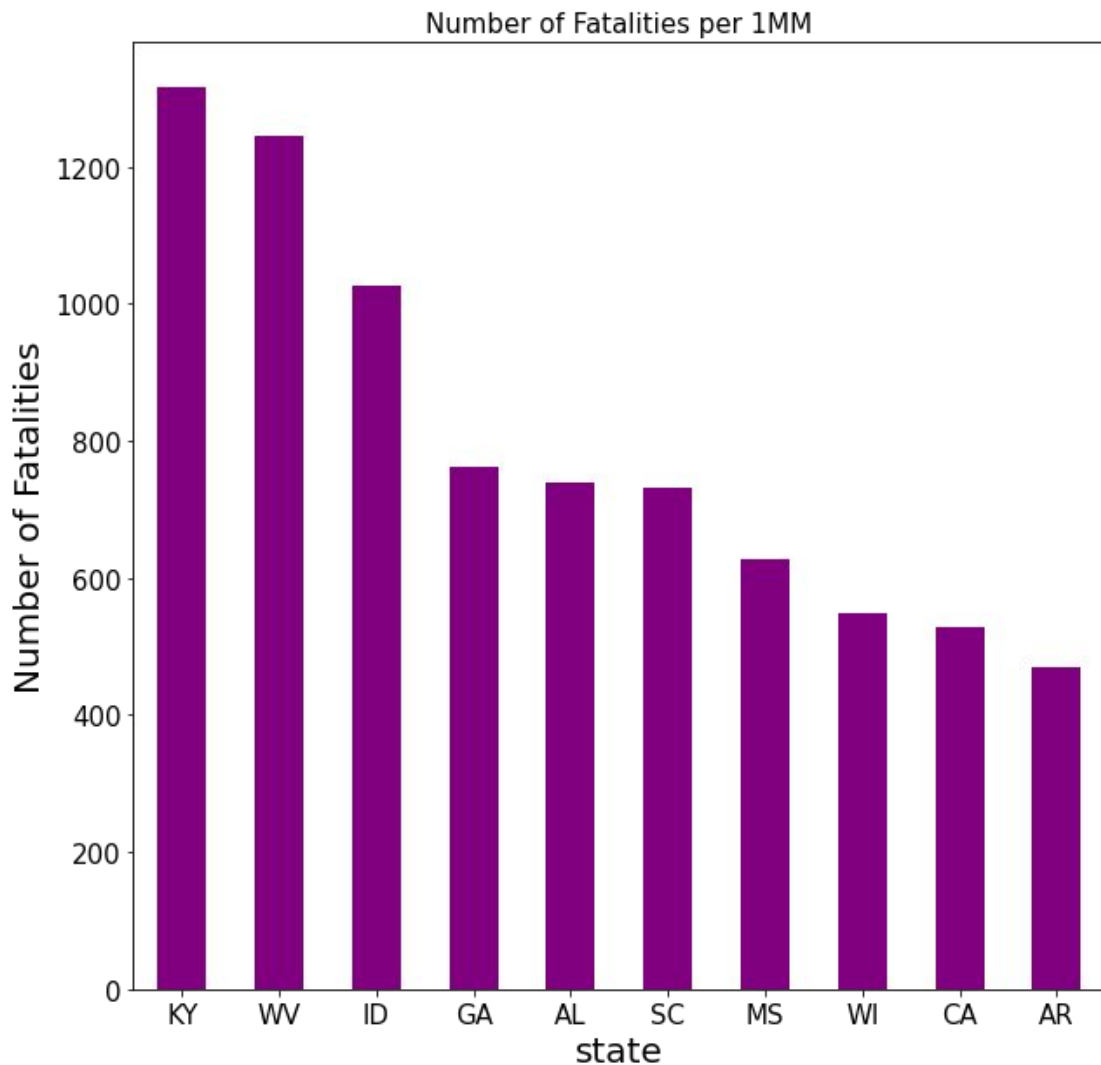This graph shows what you expect, with California, Texas, and Florida having the highest number of incidents.

But what if that is just because these states have more people…

State vs Count of Fatalities

State with Respect to Population

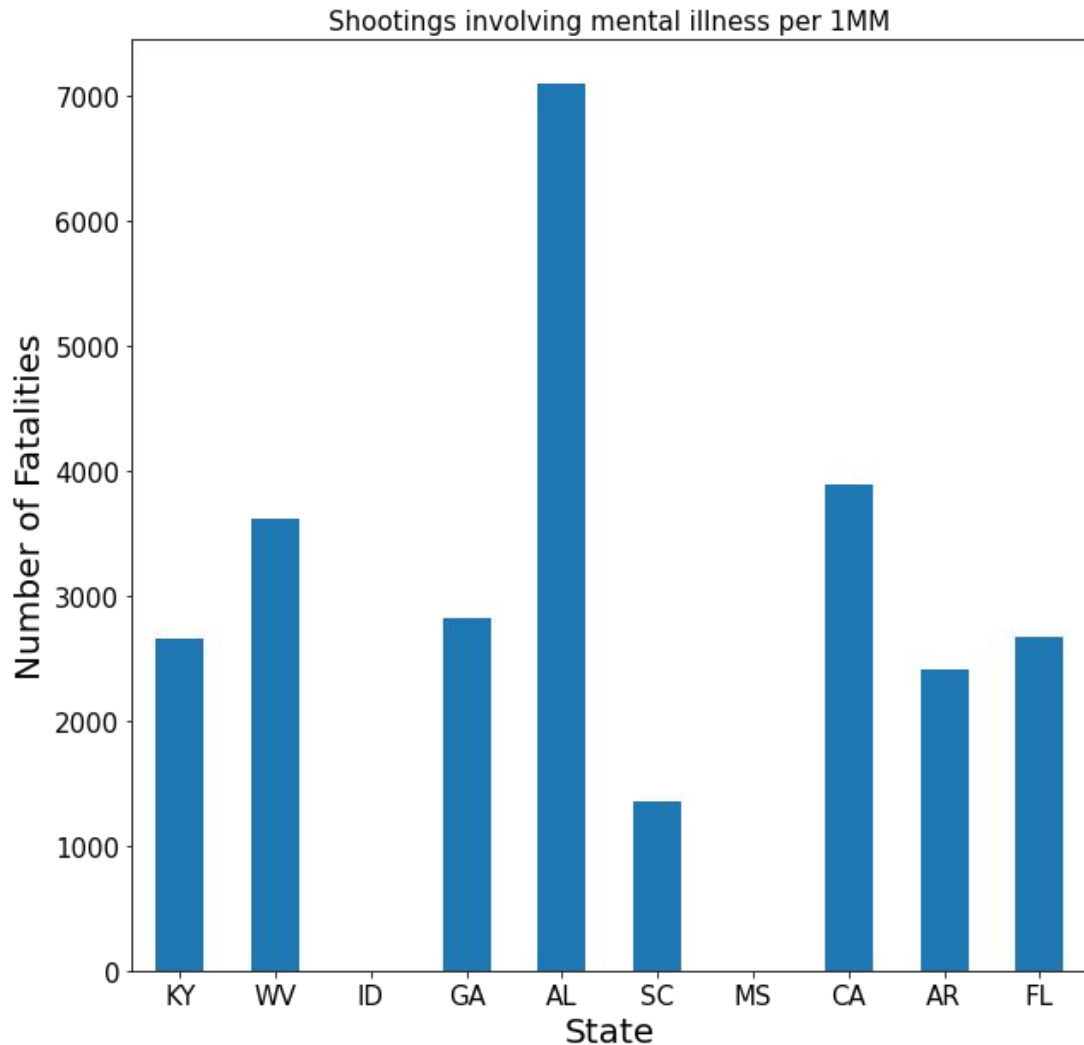As we suspected, population did have a significant impact.

- With respect to population, **Kentucky** has the number of fatalities with about **1315 per 1MM**
- Important to note that California still has a high number of fatalities at **527 per 1MM**

Number of Fatalities per 1MM

Mental Illness

Classified as True or False in the dataset, could not look at the occurrence of specific mental illnesses, but we can see:

- High number of shooting victims display signs of mental illness

- Varies significantly per state

- Variation might be a result of incomplete dataset or ambiguous definitions

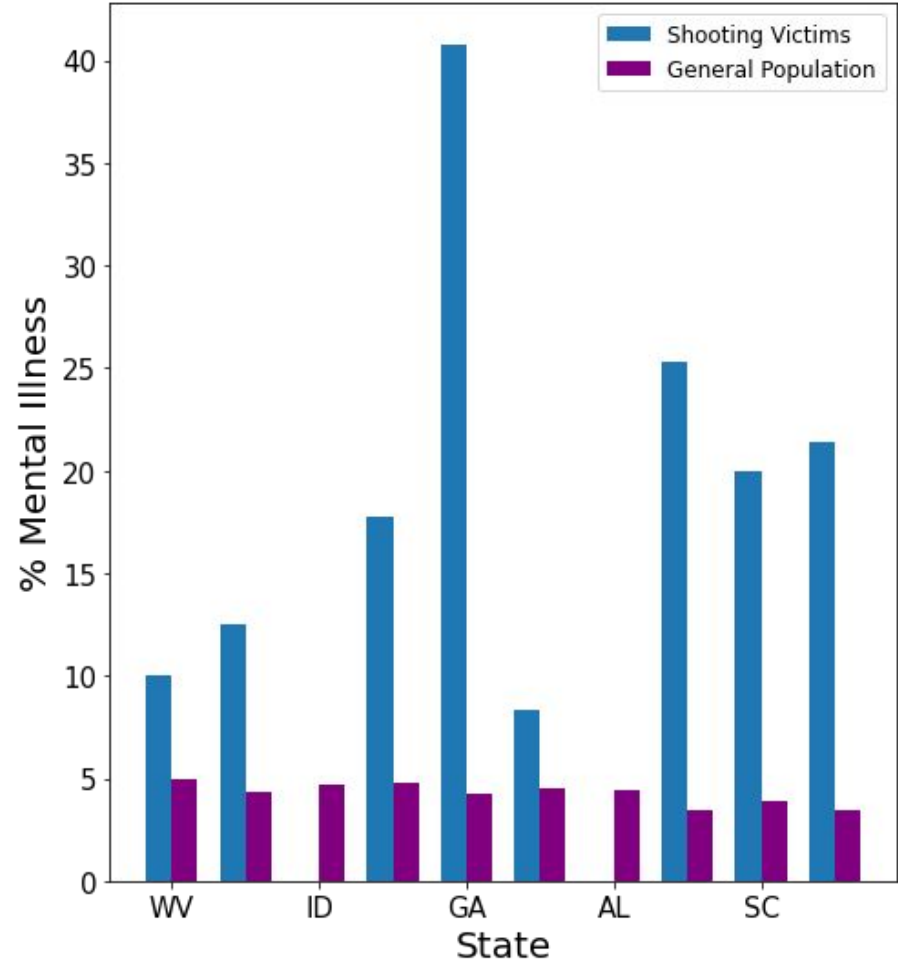Shootings involving mental illness per 1MM

Mental Illness

When compared to the frequency of mental illness in the general population....

- People with mental illness are disproportionately represented among shooting victims

Frequency of mental illness among general population vs shooting victims

So what **additional** factors do matter?

Factors that DO Impact Police Shootings:

- Location - State

- Mental Illness

Factors that DO NOT Impact Police Shootings:

- Education

- Median Income

- Poverty Rate

To Summarize …

1. The demographic of someone **most likely** to be fatally shot by the police is a **black male between 20-24**.

2. The factors that **DO impact** whether someone will be fatally shot by the police are **state, race, gender, and mental illness**.

3. The factors that **DO NOT impact** whether someone will be fatally shot by the police are **education, median income, and poverty rate.**

THANK YOU!