

US



Geographic Hotspots and Incident Repetition Analysis of Gun Violence in the United States



Areas of High

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# Geographic Hotspots and Incident Repetition Analysis of Gun Violence in the United States

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# Introduction

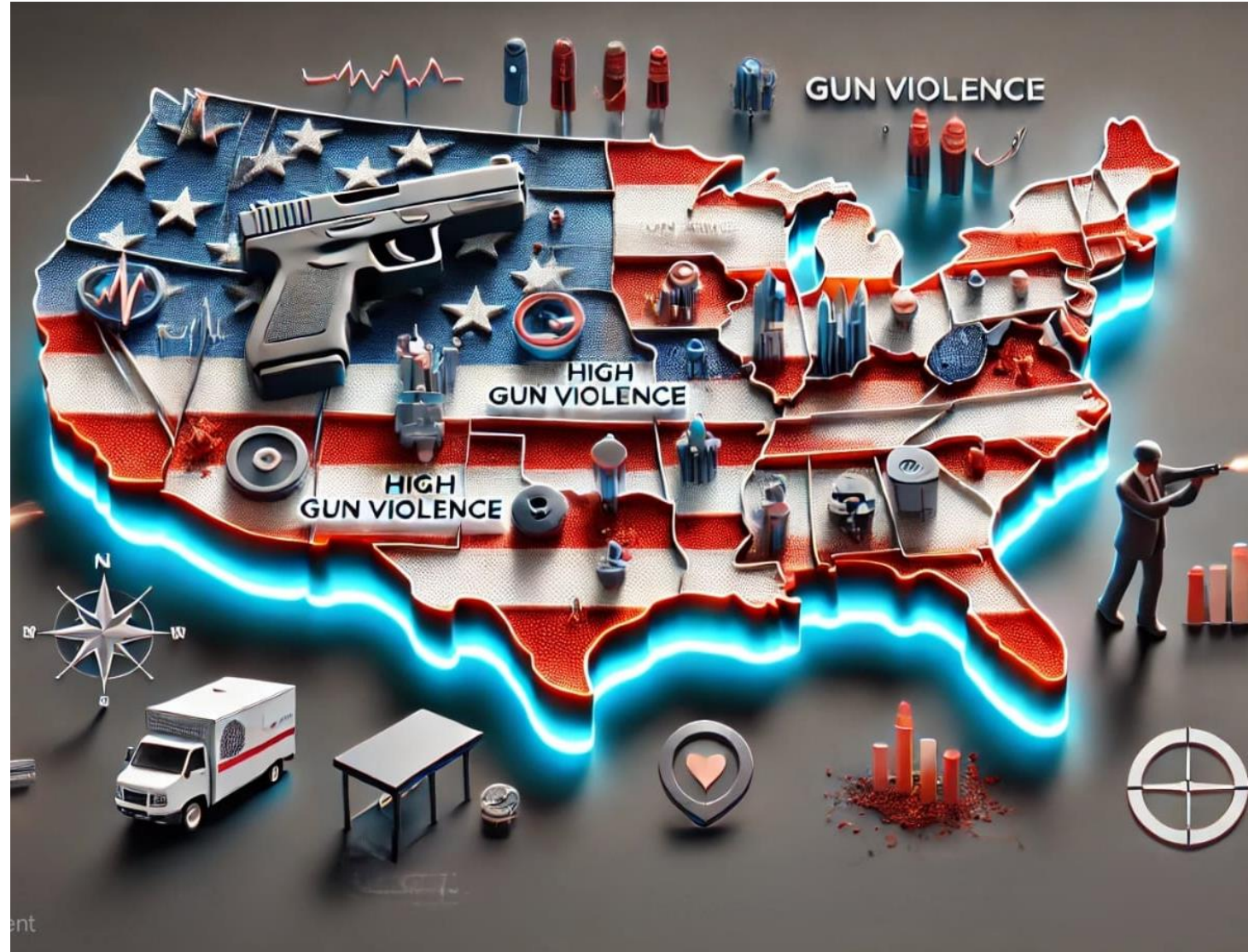
## Research Question:

- Identify high-risk areas and investigate patterns of gun violence.

## Datasets:

- FiveThirtyEight Gun Deaths Dataset (2011-2014) **[1]**
- Jamesqo Gun Violence Incident Data (2013-2018) **[2]**

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# Methodology

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**ETL Pipeline:** Data collection, cleaning, and transformation.

**Geographic Analysis:** Identified regions with the highest fatalities and injuries.

**Temporal Analysis:** Applied 3-month moving average to identify trends and spikes.

**Demographic Analysis:** Analyzed characteristics such as race, gender, and education level.





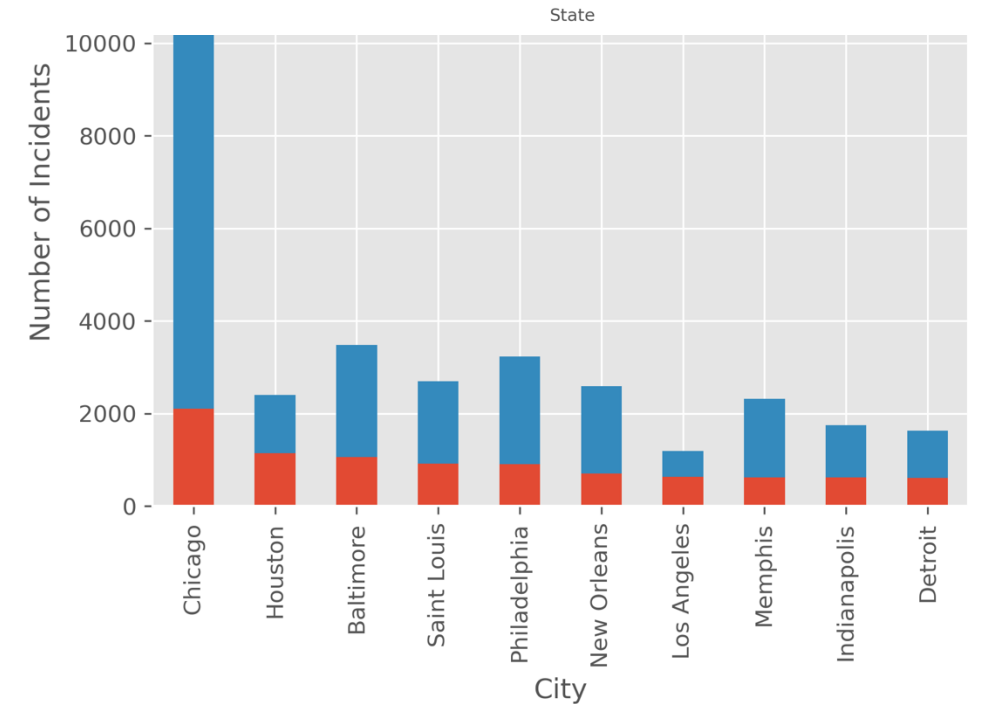
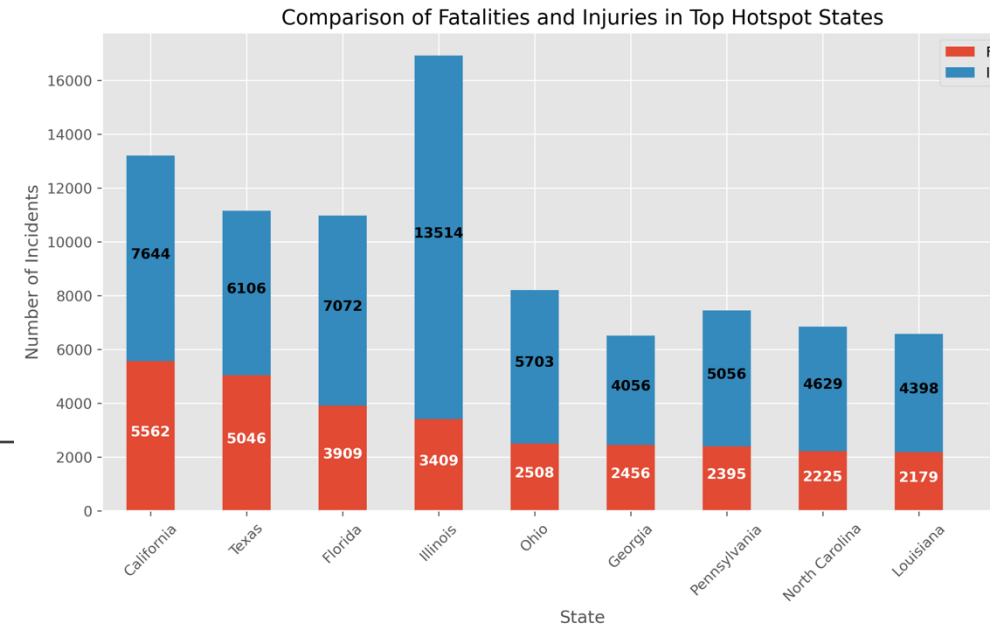
# Results and Interpretation (1/3)

## Geographic Hotspots:

**Top States:** Illinois, California, Texas

**Top City:** Chicago (highest fatalities)

**Insight:** Targeted interventions in these high-risk areas are critical to reducing gun violence.



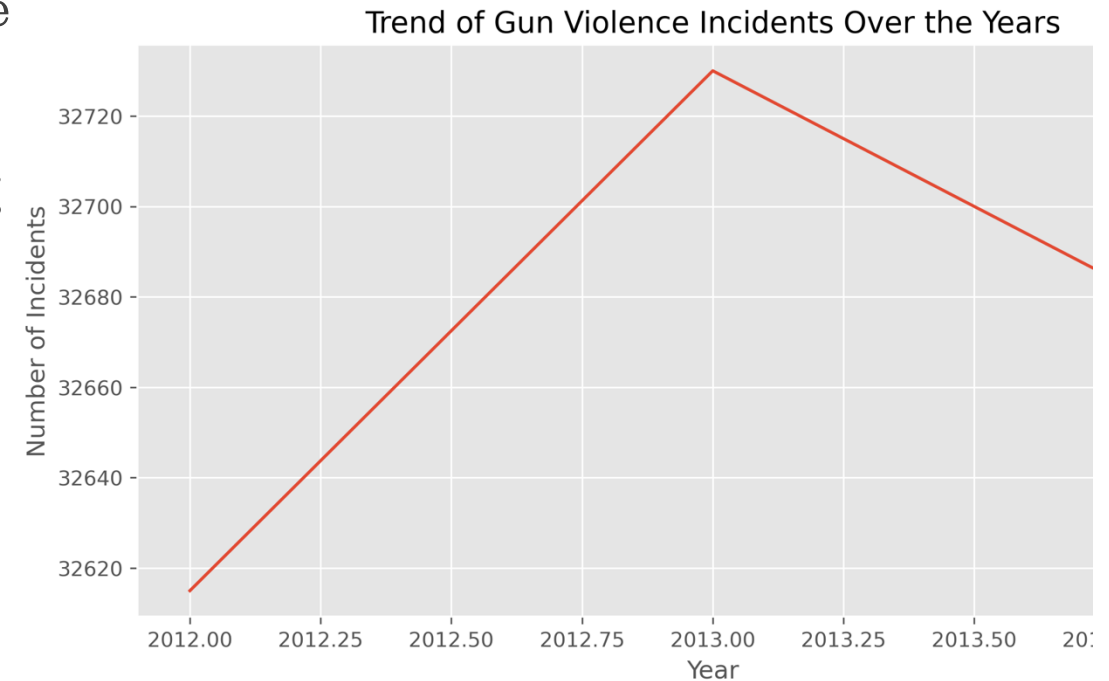
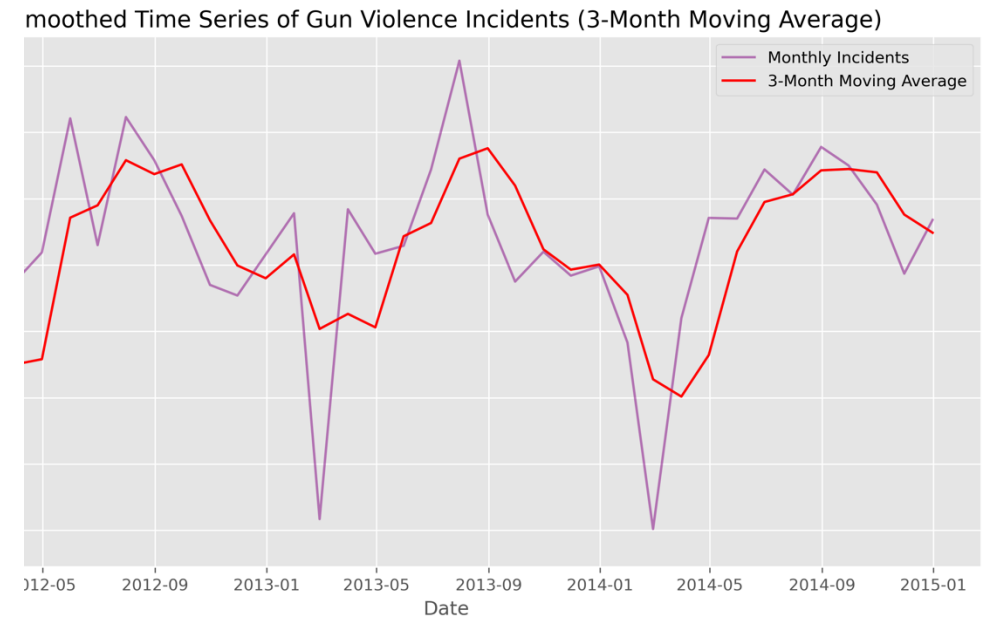
# Results and Interpretation (2/3)

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## Temporal Patterns:

**Escalation Periods:** Significant spikes in gun violence incidents during **2012-2013** and **2014-2015**.

**Insight:** These periods indicate escalation, suggesting the need for proactive, timely interventions.



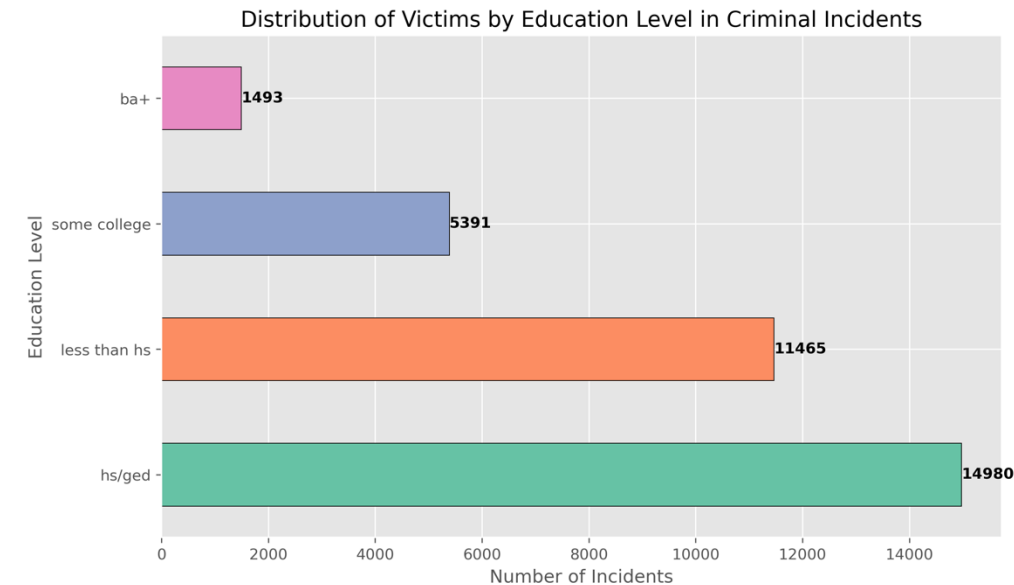
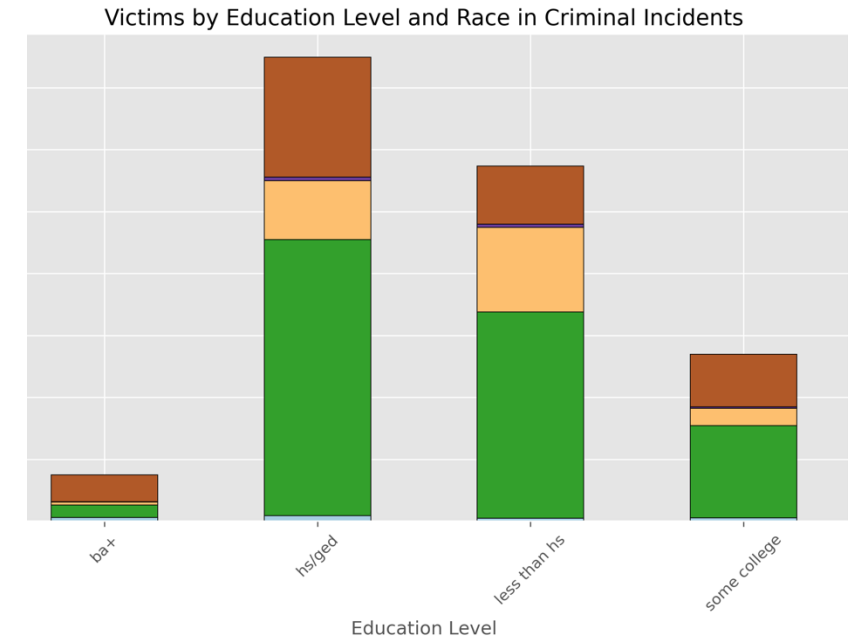
# Results and Interpretation (3/3)

## Demographic Disparities:

**Black Males:** Disproportionately affected by homicides.

**Education Levels:** Individuals with lower educational attainment, especially within the Black community, are more vulnerable.

**Insight:** Socioeconomic factors, such as education, should be prioritized in policy decisions to reduce vulnerability.



# Conclusion

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**Disparities:** Black males and low-education individuals are most affected.

**Recommendations:**

1. Target interventions in high-risk areas and during escalation periods.
2. Address educational and socioeconomic factors.

**Future Research:**

Investigate the impact of gun control laws and mental health.







Any question?  
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# Reference

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- [1]. FiveThirtyEight, “Gun Deaths Dataset,” available at: [https://raw.githubusercontent.com/fivethirtyeight/guns-data/master/full\\_data.csv](https://raw.githubusercontent.com/fivethirtyeight/guns-data/master/full_data.csv), accessed on Nov. 26, 2024.
- [2]. Jamesqo, “Gun Violence Incident Data,” available at: <https://github.com/jamesqo/gun-violence-data/raw/master/DATA%202013%2003-2018.tar.gz>, accessed on Nov. 26, 2024.
- [3]. Creative Commons, “Creative Commons Attribution 4.0 International (CC BY 4.0) License,” available at: <https://creativecommons.org/licenses/by/4.0/>, accessed on Nov. 26, 2024.