

Analyzing the Effect of Race, Gender, and Age on Police Violence

STAT199: Introduction to Data Science

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Introduction

- ❖ **Motivation:** recent police shootings and excess police force against people of color
- ❖ US Department of Justice Office of Justice Programs: studies show consistent high costs of police violence, need for police to be policing themselves
- ❖ Children and men of minority backgrounds experience more direct violence

- ❖ **Our interest:** analysis of how a victim's age, race, and gender affect police violence
- ❖ Data collection: manually combing news reports, 2015-2022, no apparent ethical concerns

- ❖ **Research question:** How does the average age differ by race and gender for victims of police shootings, and who experiences more violence (shot and tasered) compared to just shot?

- ❖ **Hypothesis:** We hypothesize that minority victims (African American, Hispanic, Native American, other) are more likely to experience more violence (shot and tasered) at a younger age than white victims. Additionally, we hypothesize that male victims of a younger age are more likely to experience more violence than female victims.

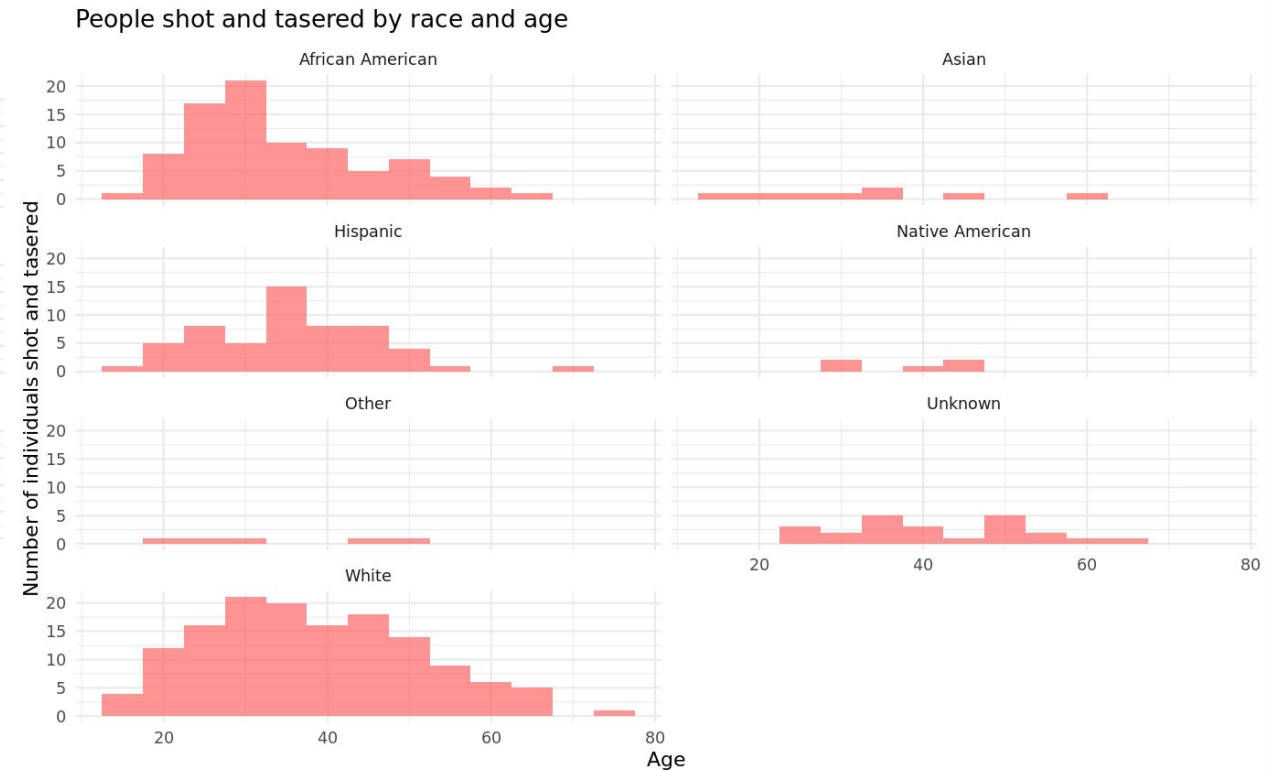
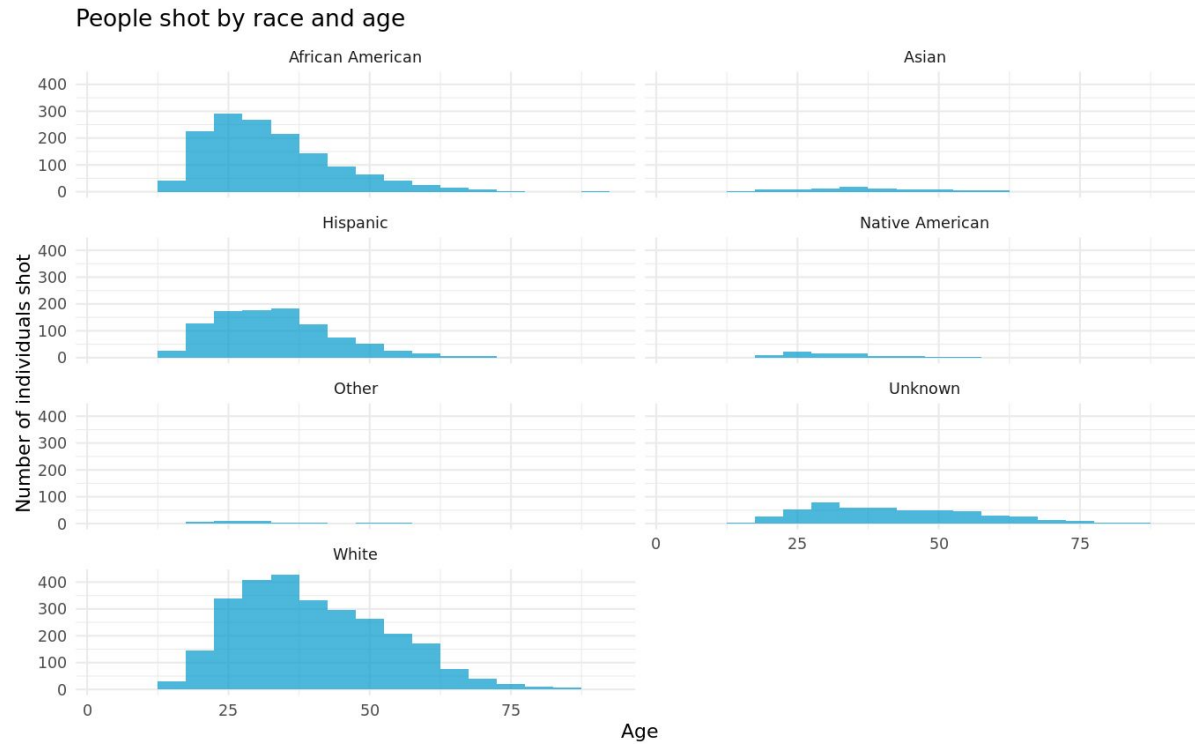
Graph 1: Ages of those shot vs shot and tasered

- Forward selection AIC identified age as the most critical variable to examine alone
- Box plot faceted by shot/shot tasered
- Hypothesis: younger victims (20-30yrs) will be shot and tasered more



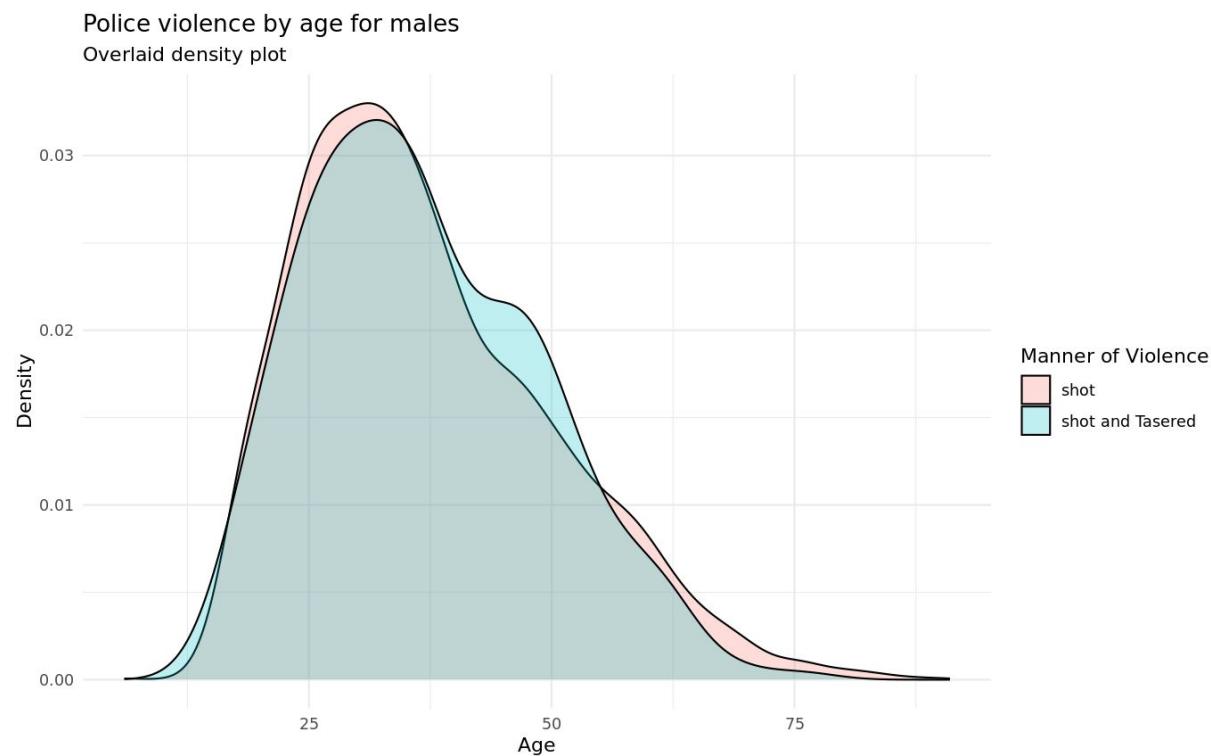
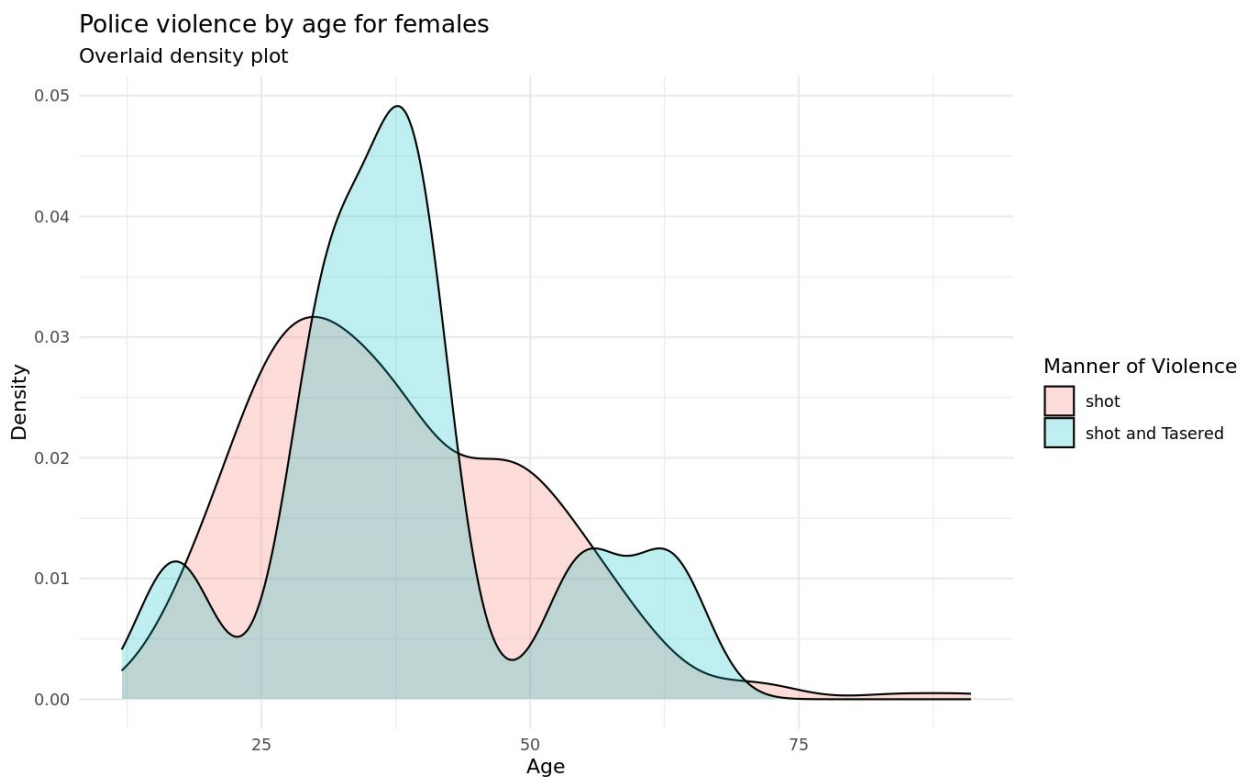
Graphs 2 and 3: Age, race, and shot/shot tasered

- Histogram faceted by race
- Hypothesis: hispanic and african american victims will be shot and tasered more



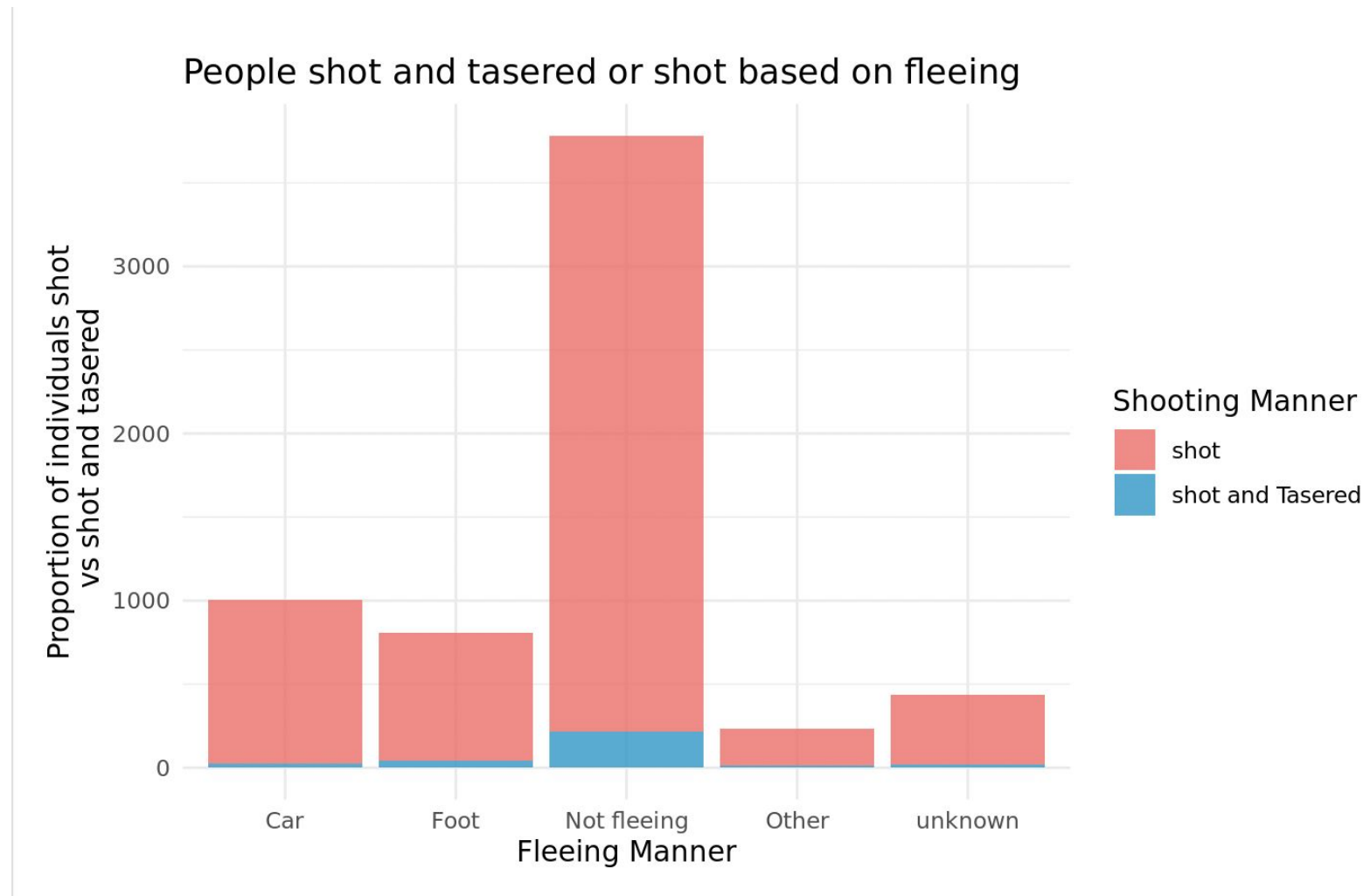
Graphs 4 and 5: Gender, age, and shooting manner

- Density plot with age on the x-axis with shot/shot and tased overlaid
- Graph 4 for female, graph 5 for male
- Hypothesis: male targets at younger ages will be shot and tased more



Graph 6: Analysis of a potential confounding variable

- Histogram with three possibilities for fleeing on x-axis, filled by shooting manner
- Hypothesis: fleeing status will have an effect, and those not fleeing will receive the highest rate of violence



Final Results

- ❖ **AIC:** we conclude that the most prominent factors related to violence levels are age, then gender, then race
- ❖ **Age alone:** no significant difference in shooting manner
- ❖ **Age and race:** minority groups experience violence at younger ages than white groups
- ❖ **Age and gender:** less difference in shooting manner between men of different ages than women, males experience more violence overall
- ❖ **Confounding variable:** fleeing manner does not have a significant effect

- ❖ **Hypothesis Review:** We hypothesized that minority and male victims experienced more violence at a younger age
- ❖ **Confirmation:** Minorities experience more police violence (shot and shot/tasered) at a younger age & men experience significantly more police violence (shot and shot/tasered) than women.
- ❖ **Contradiction:** Shooting manner did not change significantly depending on age for different races and age for each gender.

Limitations and Implications

- ❖ **Limitations:**
- ❖ We prioritized interactions between age and race/gender
- ❖ More data on men than women, would want more comprehensive data
- ❖ Measure of level of violence was shot/shot and tasered, would want more extensive information
 - Eg. violence/no violence, fatal violence/not fatal, other weapons used

- ❖ **Global implications:** extensive studies could indicate trends in police violence & help prevent those trends moving forward