

Using Demographic Variables to Evaluate Opioid Use Disorder

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OBJECTIVES

- Obtain de-identified data on opioid fatalities from the New York Department of Health and Connecticut Chief Medical Examiner from 2012 to 2017.
- Conduct comparison analysis on New York and Connecticut datasets using demographic variables such as age, gender, and race
- Analyze and visualize data to increase awareness of opioid use disorder disaster and advocate for interventions.

BACKGROUND

- According to CDC, since 1999, over **one million** people have died of drug overdose with 75% of deaths involving opioids.
- An increased number of deaths was found in three waves over 20 years.
- The first overdose wave occurred in the 1990s with prescription opioids such as oxycodone, hydrocodone, morphine, and methadone, the second in 2010 with heroin, and the third in 2013 with fentanyl.
- According to the CDC, **over 100,000** opioid-related deaths occurred in the United States, with synthetic opioids contributing to 68.6% of the fatalities in 2022.
- The major reason behind overdose deaths, whether intentional or unintentional, involved opioid substances.
- Opioid substances can relieve pain and give euphoria, but they can cause drowsiness, nausea, constipation, slowed breathing, addiction to opioids, or even death.
- Treatment options include methadone, buprenorphine, naltrexone, and possible behavior treatment.

ACKNOWLEDGEMENT

Thank you to my mentor Dr. Deborah Spoerner and Dr. Nicole Adams for helping me this project!

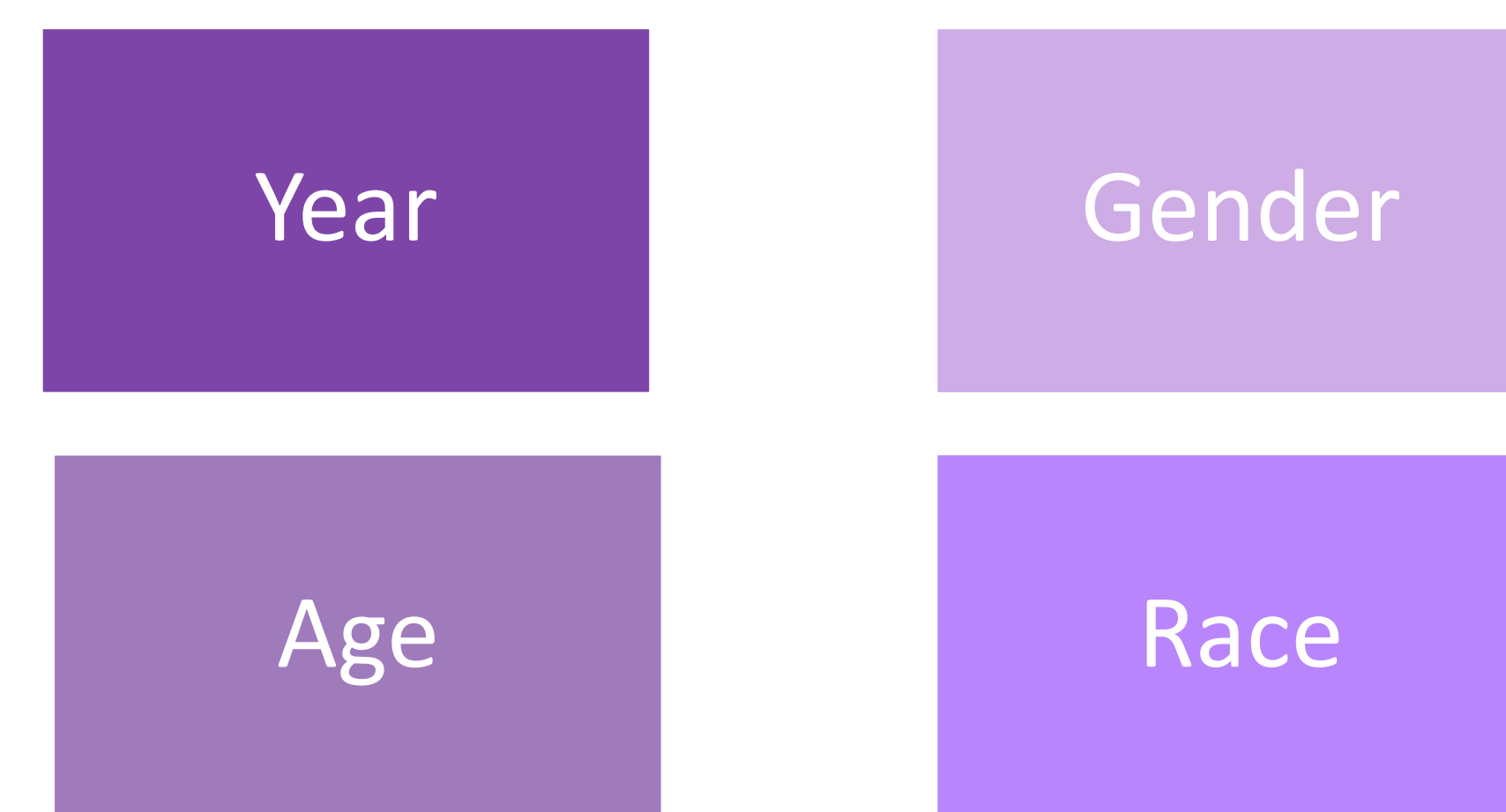
CITATION

Please visit this QR code to check citations used for this project!



METHODOLOGY

- Data was extracted from the New York Department of Health and the Connecticut Chief Medical Examiner.
- For consistency among the New York and Connecticut datasets, the time interval was restricted from 2012 to 2017.
- Utilized Python to visualize demographic variables with the number of deaths.
- Key variables of Interest:



CONCLUSION

Challenges

- Age group was already pre-grouped in the datasets, so it was difficult to ungroup age groups from the two datasets without knowing the exact age of patients.
- Obtaining the most current publicly available dataset on opioid use was cost-prohibitive.

Recommendations

- Find a dataset that reflects the current time frame.
- Need to analyze and compare opioid use disorder in additional states.
- Find the statistical significance of the analyzed data.

Impacts

- Encourage policymakers and healthcare professionals to intervene in opioid use disorder to save lives.
- Advocate the substitution of medications that are less addictive than opioids.

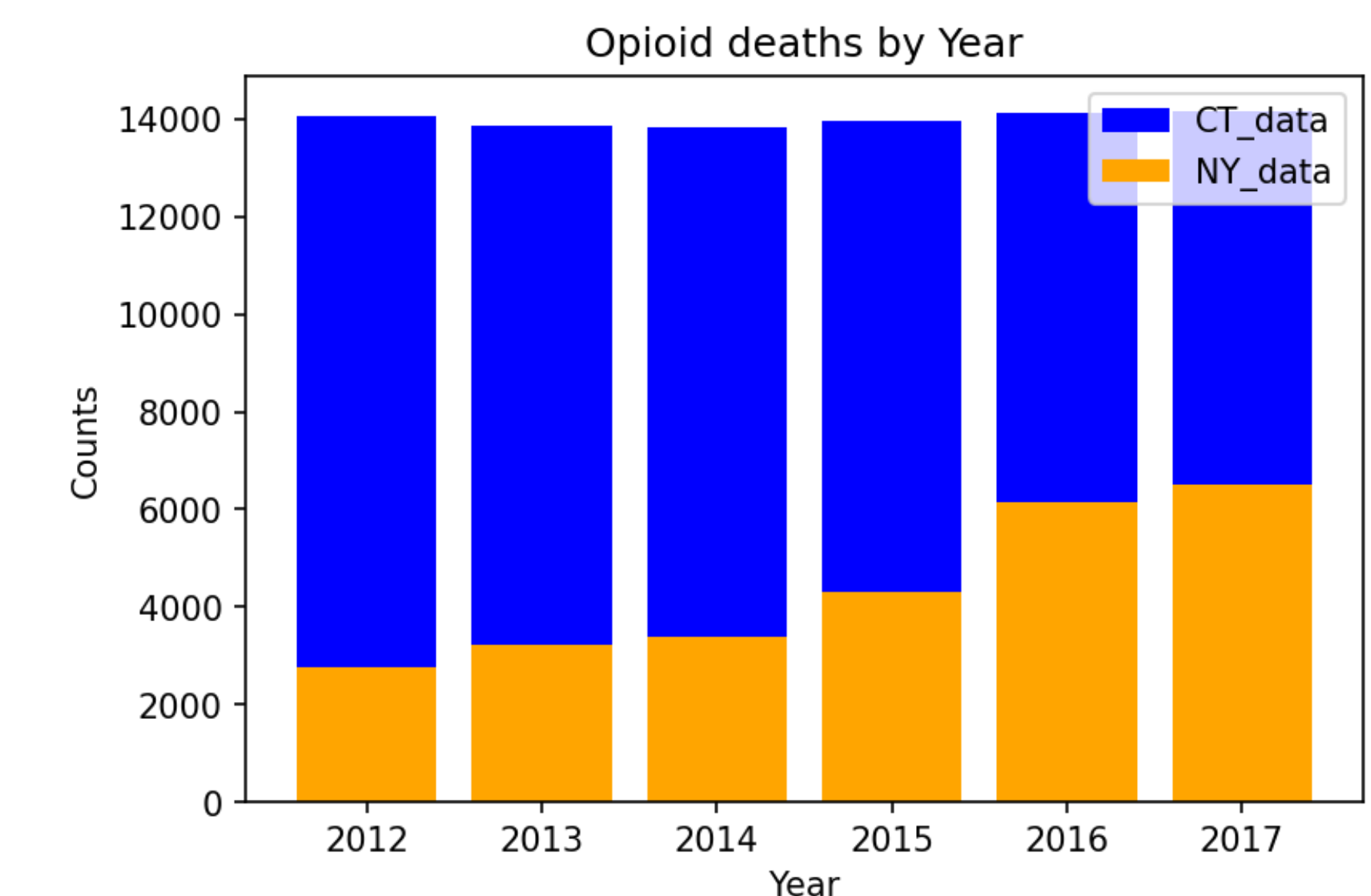
Future Plans

- Address the current opioid use disorder pandemics by publishing in the Purdue Journal.

RESULTS

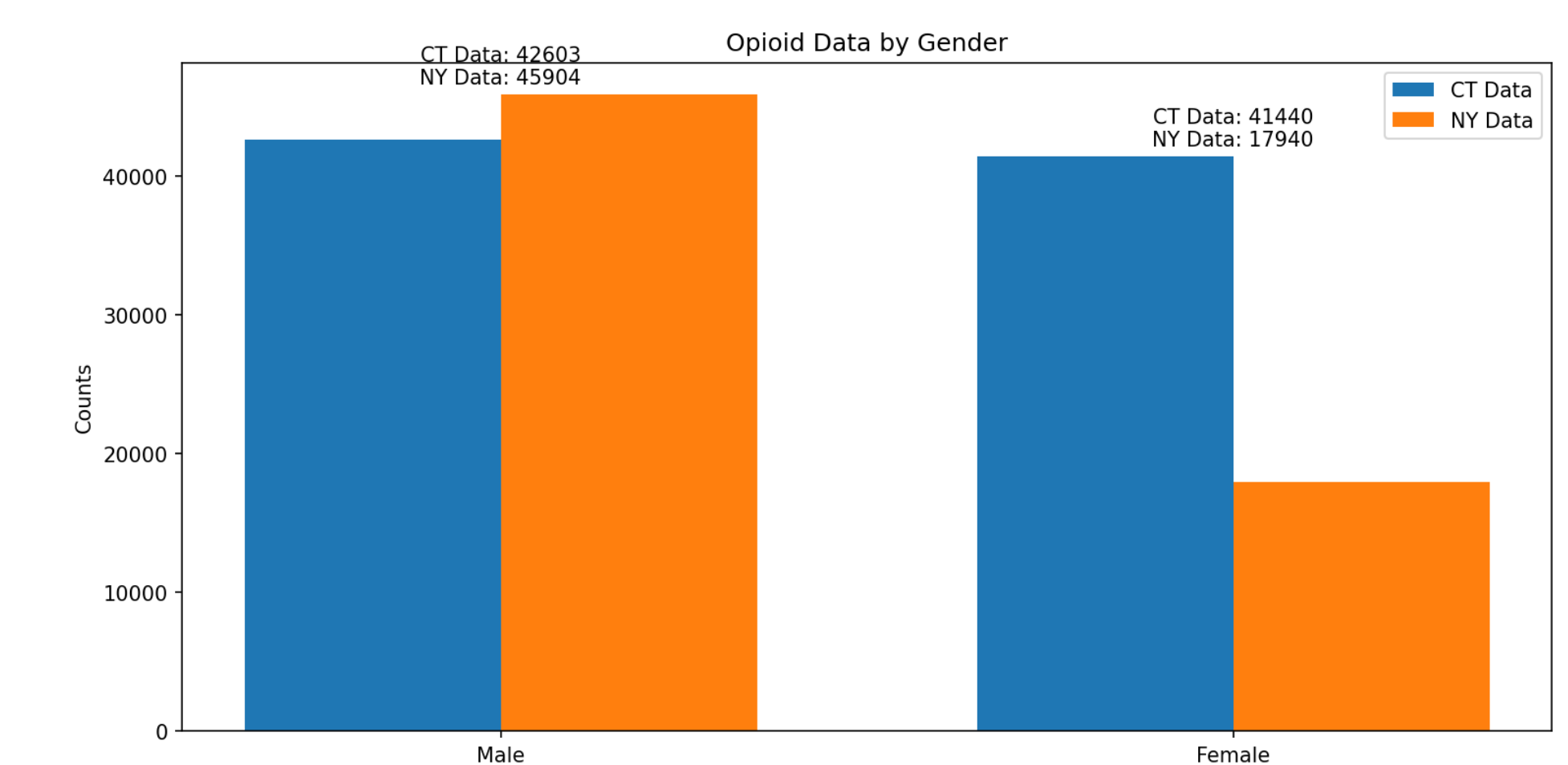
Year

- From 2012 to 2017, Connecticut showed a 0.761% increase in death rates, while New York showed a 137.045% rise.



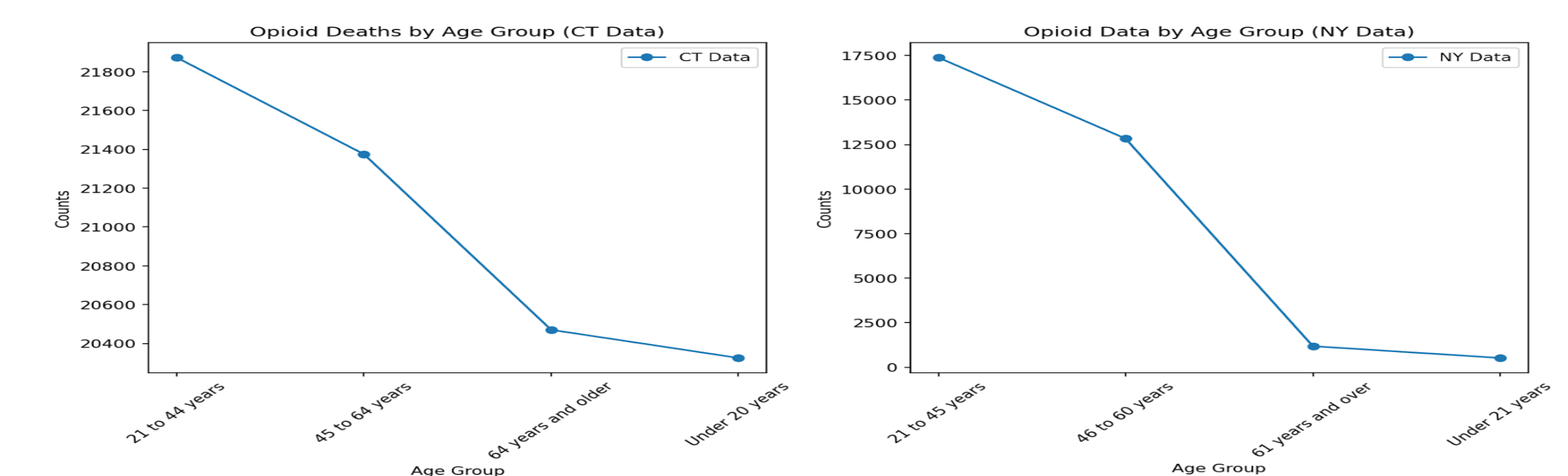
Gender

- The number of male deaths was higher in both states.



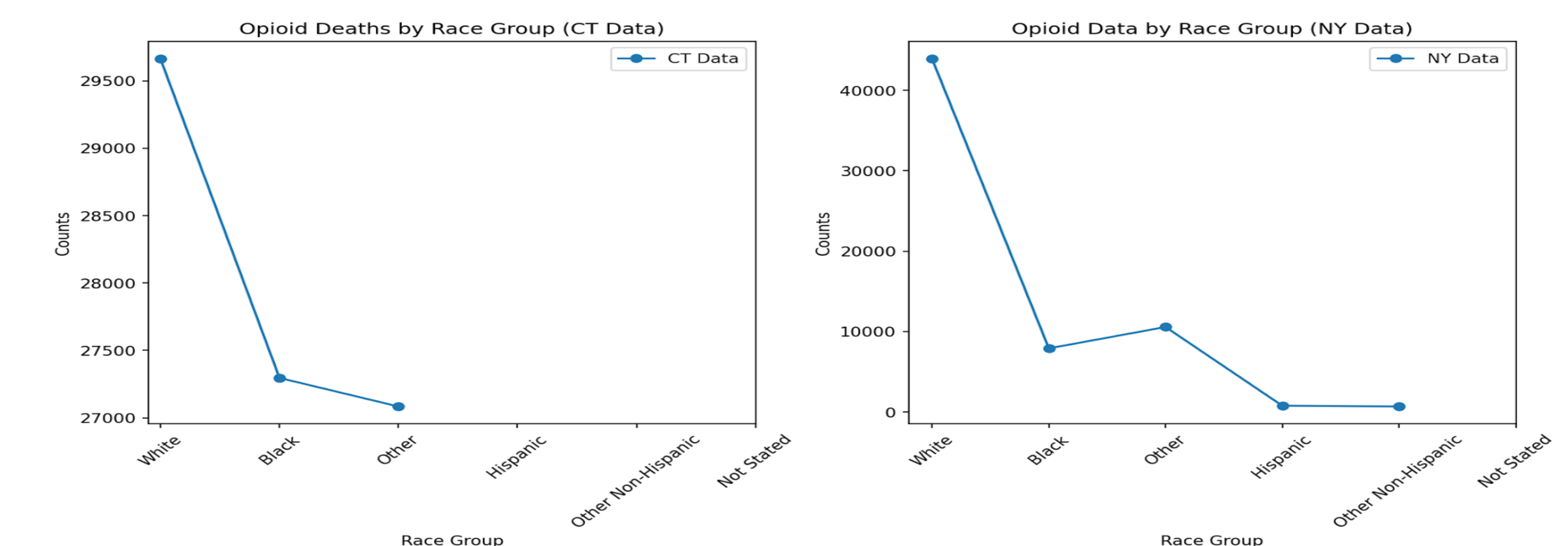
Age

- 21 to 44 or 45 years old had the highest death counts in both states.
- Under 21 had the lowest death counts in both states.



Race

- White people had the highest death counts, followed by black people.



- In conclusion, White males aged from 21 to 44 exhibited the highest opioid death rates from 2012 to 2017 in both New York and Connecticut.