EDA for Infant Mortality

Dataset Information

Infant Mortality Rate by Maternal Race/Ethnicity for New York City, 2007-2016

SUMMARY

Infant Mortality Rate by Maternal Race/Ethnicity for New York City, 2007-2016 Counts of infant deaths (age <1 year) are based on NYC death certificates. The rate is calculated using the counts of infant deaths as the numerator and the count of live births from NYC birth certificates as the denominator.

Source: https://data.cityofnewyork.us/d/fcau-jc6k
Last updated at https://data.cityofnewyork.us/data.json : 2019-02-11

Dataset Information

This dataset is a pandas DataFrame with 48 entries and 9 columns. It provides information on infant mortality rates and related statistics broken down by year and maternal race or ethnicity.

Data Columns

- Year: Year of the data entry.
- Maternal Race or Ethnicity: Race or ethnicity of the mother.
- Infant Mortality Rate: The number of infant deaths per 1,000 live births.
- Neonatal Mortality Rate: The number of neonatal deaths (within the first 28 days of life) per 1,000 live births.
- Postneonatal Mortality Rate: The number of postneonatal deaths (from 28 days to 1 year of age) per 1,000 live births.
- Infant Deaths: Total number of infant deaths.
- Neonatal Infant Deaths: Total number of neonatal infant deaths.
- Postneonatal Infant Deaths: Total number of postneonatal infant deaths.
- Number of Live Births: Total number of live births.

Data Types

- int64: Integer data type.
- float64: Floating-point numeric data type.
- object: Categorical data type (specifically, text strings indicating race or ethnicity).

Missing Values

- Year 0
- Materal Race or Ethnicity 0
- Infant Mortality Rate 8
- Neonatal Mortality Rate 8
- Postneonatal Mortality Rate 9
- Infant Deaths 8
- Neonatal Infant Deaths 8
- Postneonatal Infant Deaths 8
- Number of Live Births 0

Filling of Missing Values

We fill in missing values by using the average values of each column. This helps keep our data consistent and prevents any big changes or errors. It's a good way to fill in missing information without causing problems or messing up the data.

Report: Mortality Rates by Ethnicity

Introduction

This report examines the survival rates of babies from different ethnic backgrounds during their first year of life. We focus on three critical periods: neonatal (first month), postneonatal (after the first month but before the first birthday), and overall infant mortality rates. By analyzing these figures, we aim to identify any disparities among ethnic groups that warrant attention.

Analysis

According to our graph fig 1.1 we gain following info:

- Black Non-Hispanic: This group has the highest infant mortality rate at 7.6 per 1,000 live births. The neonatal mortality rate is also notably high at 11.7, with a postneonatal rate of 20.1.
- Other Hispanic: The infant mortality rate for this group is 4.9, with neonatal and postneonatal rates of 7.4 and 9.9 respectively.
- White Non-Hispanic: Among white non-Hispanic babies, the infant mortality rate is lower at 2.6. The neonatal mortality rate is 4.9, and the postneonatal mortality rate is 7.6.
- Other/Two or More: This category shows an infant mortality rate of 5.3, with neonatal and postneonatal rates of 8.6 and 10.2 respectively.
- Puerto Rican: Puerto Rican infants have an infant mortality rate of 6.4. The neonatal mortality rate is 10.2, and the postneonatal mortality rate is 15.1.

- Asian and Pacific Islander: Among this group, the infant mortality rate is relatively low at 3.2. The neonatal mortality rate matches the white non-Hispanic group at 4.9, and the postneonatal rate is 6.7.

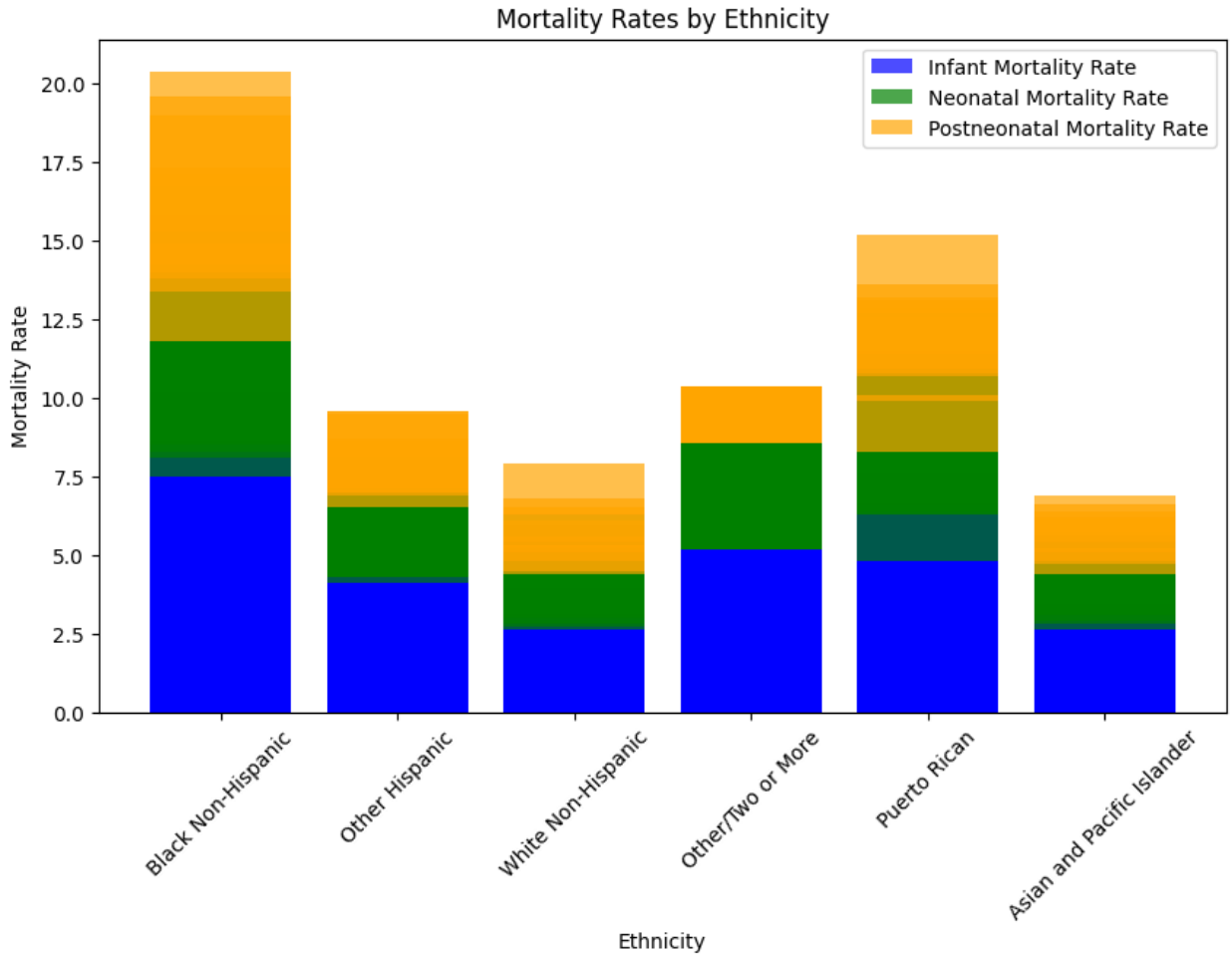


Fig. 1.1

Conclusion

The updated findings underscore significant disparities in infant mortality rates among different ethnic groups. Particularly concerning are the high rates observed among Black non-Hispanic and Puerto Rican infants, emphasizing the urgent need for targeted interventions and improved healthcare access for these communities.

To address these disparities effectively, it's crucial to tailor interventions to the specific needs of each ethnic group and prioritize efforts to improve maternal and infant healthcare across the board. By leveraging these insights and implementing targeted strategies, we can strive towards equitable health outcomes for all infants, regardless of their ethnic background

Report: Infant Mortality Rate Over Time

Introduction

This report examines the trends in infant mortality rates over a specific period, focusing on how these rates have changed over time. Infant mortality, the death of babies before their first birthday, is a crucial indicator of a population's health and well-being. By analyzing these trends, we aim to gain insights into the effectiveness of healthcare interventions and identify areas for improvement in infant health outcomes.

Data Overview

We utilized a dataset containing information on infant mortality rates spanning several years. The dataset includes data on the number of infant deaths per 1,000 live births for each year, providing a comprehensive view of infant mortality trends over time.

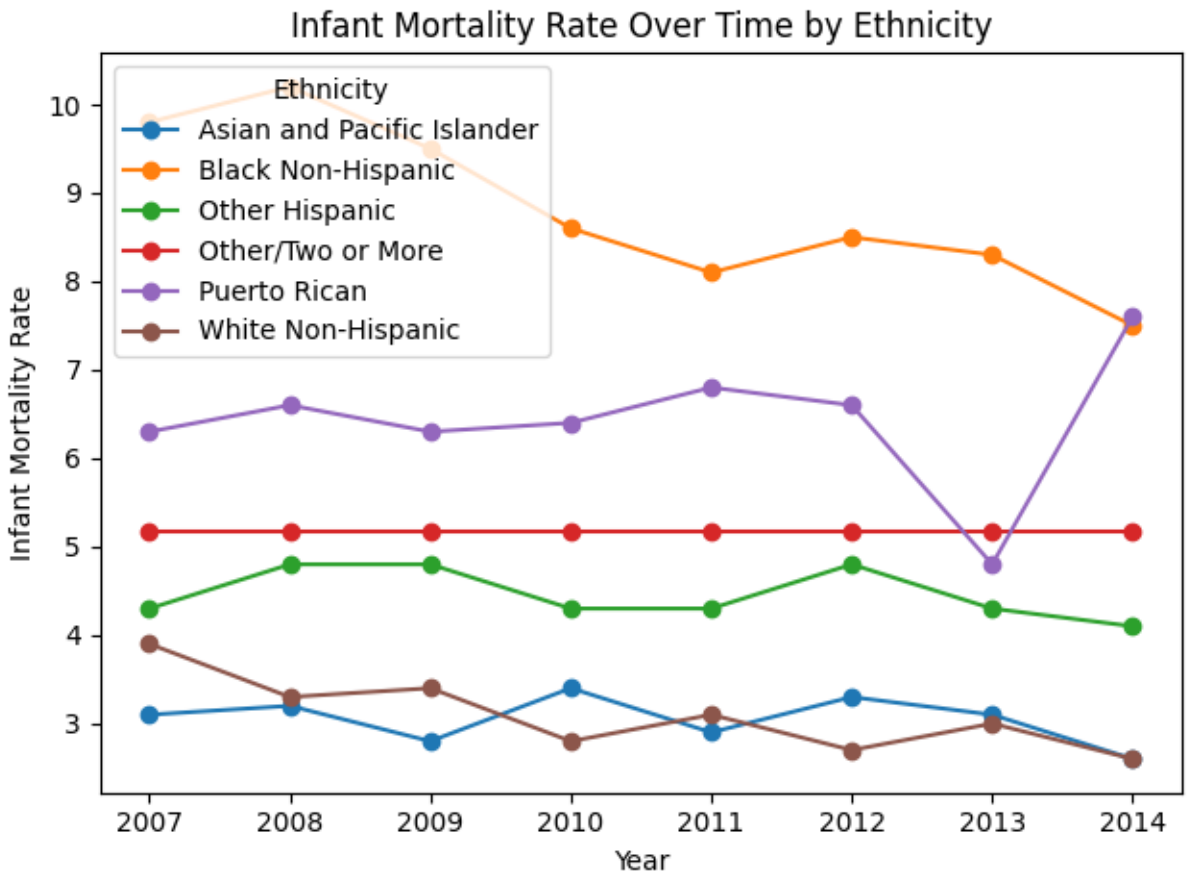
Analysis

Our analysis revealed the following trends in infant mortality rates over the years:

- **Overall Trend**: Initially, the infant mortality rate was relatively high, indicating significant health challenges for newborns. However, over time, there has been a noticeable decline in infant mortality rates, suggesting improvements in healthcare services, access to medical interventions, and overall maternal and child health.

- **Yearly Fluctuations:** While there is a general downward trend in infant mortality rates, there are also fluctuations from year to year. These fluctuations could be influenced by various factors such as changes in healthcare policies, advancements in medical technology, socioeconomic conditions, and public health initiatives.

- **Identification of Critical Periods:** Analyzing the data over time helps identify critical periods where infant mortality rates may spike or decline. Understanding these fluctuations can inform targeted interventions during specific time frames to address emerging health challenges effectively.



Conclusion

The analysis of infant mortality rates over time reveals a promising trajectory of improvement, indicating advancements in healthcare delivery and maternal and child health outcomes. However, the presence of yearly fluctuations underscores the need for continued vigilance and targeted interventions to sustain and further improve infant health outcomes.

Report: Average Yearly Live Births by Ethnicity

Introduction

This report examines the average yearly live births across different racial and ethnic groups. Understanding the distribution of live births among various ethnicities is crucial for assessing population demographics, healthcare resource allocation, and addressing disparities in maternal and child health outcomes.

Analysis

Our analysis of the average yearly live births by ethnicity reveals the following insights:

- **White Non-Hispanic**: With an average of approximately 38,956 live births per year, white non-Hispanic individuals contribute the highest number of live births among the ethnic groups studied. This demographic group constitutes a significant portion of the overall birth population.

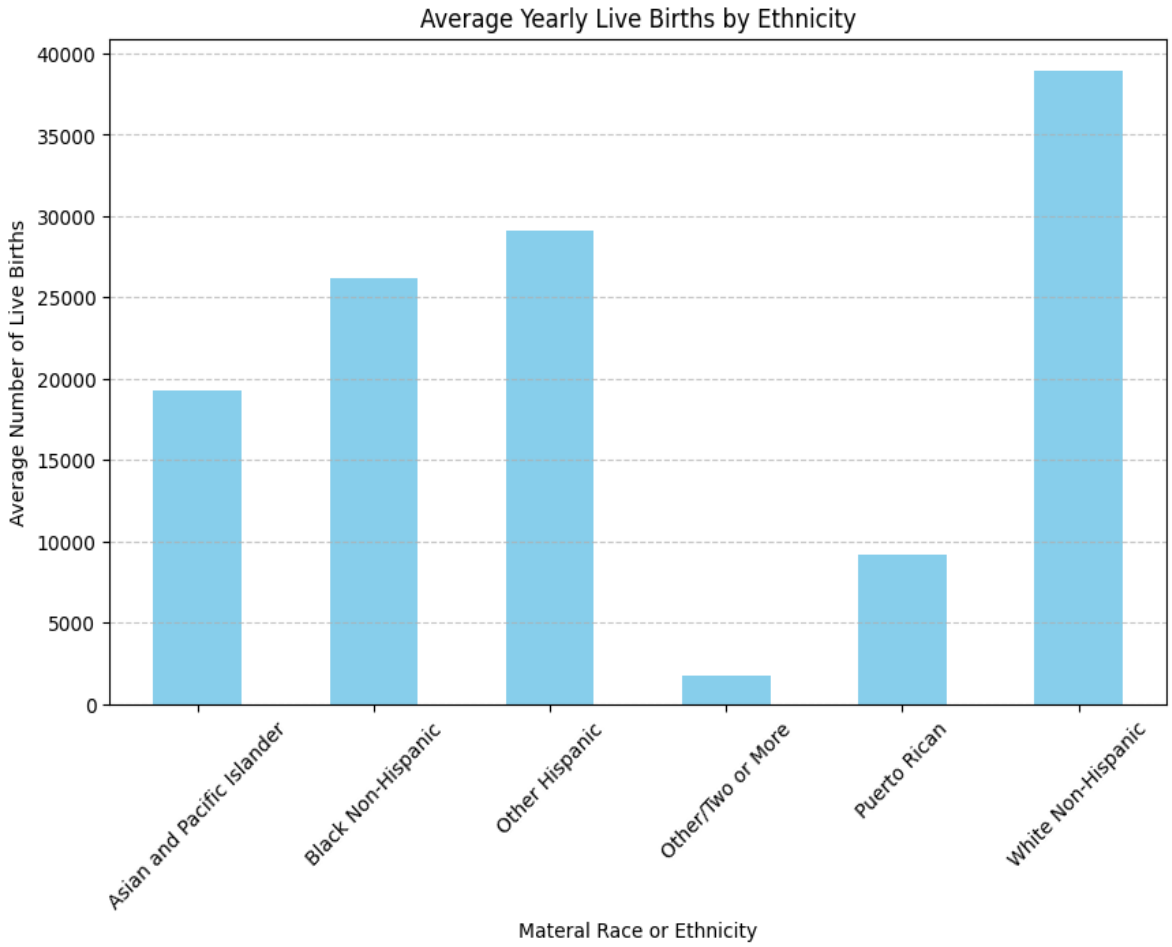
- **Black Non-Hispanic**: Black non-Hispanic individuals have an average of around 26,199 live births per year, indicating a substantial contribution to the birth population. Understanding the factors influencing birth rates in this demographic is essential for addressing disparities in maternal and child health outcomes.

- **Other Hispanic**: Other Hispanic individuals contribute an average of approximately 29,074 live births per year, highlighting the importance of considering diverse Hispanic subgroups in healthcare planning and interventions.

- **Asian and Pacific Islander**: This demographic group has an average of approximately 19,292 live births per year, contributing significantly to the overall birth population. Understanding the unique healthcare needs of Asian and Pacific Islander communities is essential for providing culturally sensitive care.

- **Puerto Rican**: Puerto Rican individuals have an average of around 9,205 live births per year, indicating a smaller but still notable contribution to the birth population. Tailoring healthcare interventions to address the specific needs of Puerto Rican mothers and infants is critical for improving maternal and child health outcomes.

- **Other/Two or More**: This demographic group has the lowest average yearly live births, with approximately 1,737 live births per year. While smaller in number, understanding the unique characteristics and healthcare needs of this diverse group is essential for ensuring equitable access to maternal and child health services.



Conclusion

The analysis of average yearly live births by ethnicity provides valuable insights into the demographic composition of the birth population. Understanding the distribution of live births among different racial and ethnic groups is essential for developing targeted healthcare interventions, allocating resources effectively, and addressing disparities in maternal and child health outcomes. By recognizing and addressing the unique healthcare needs of diverse ethnic populations, policymakers and healthcare providers can work towards improving maternal and child health outcomes for all communities.

Report: Average Yearly Infant Deaths by Ethnicity

Introduction

This report explores the average yearly infant deaths across various racial and ethnic groups. Understanding the distribution of infant deaths among different ethnicities is essential for identifying disparities in maternal and child health outcomes and guiding targeted interventions to improve healthcare equity.

Analysis

Our analysis of the average yearly infant deaths by ethnicity yields the following insights:

- **Black Non-Hispanic**: This ethnic group experiences the highest average of approximately 464.75 infant deaths per year. This figure underscores significant disparities in maternal and child health outcomes and highlights the urgent need for targeted interventions to address the underlying factors contributing to these disparities.

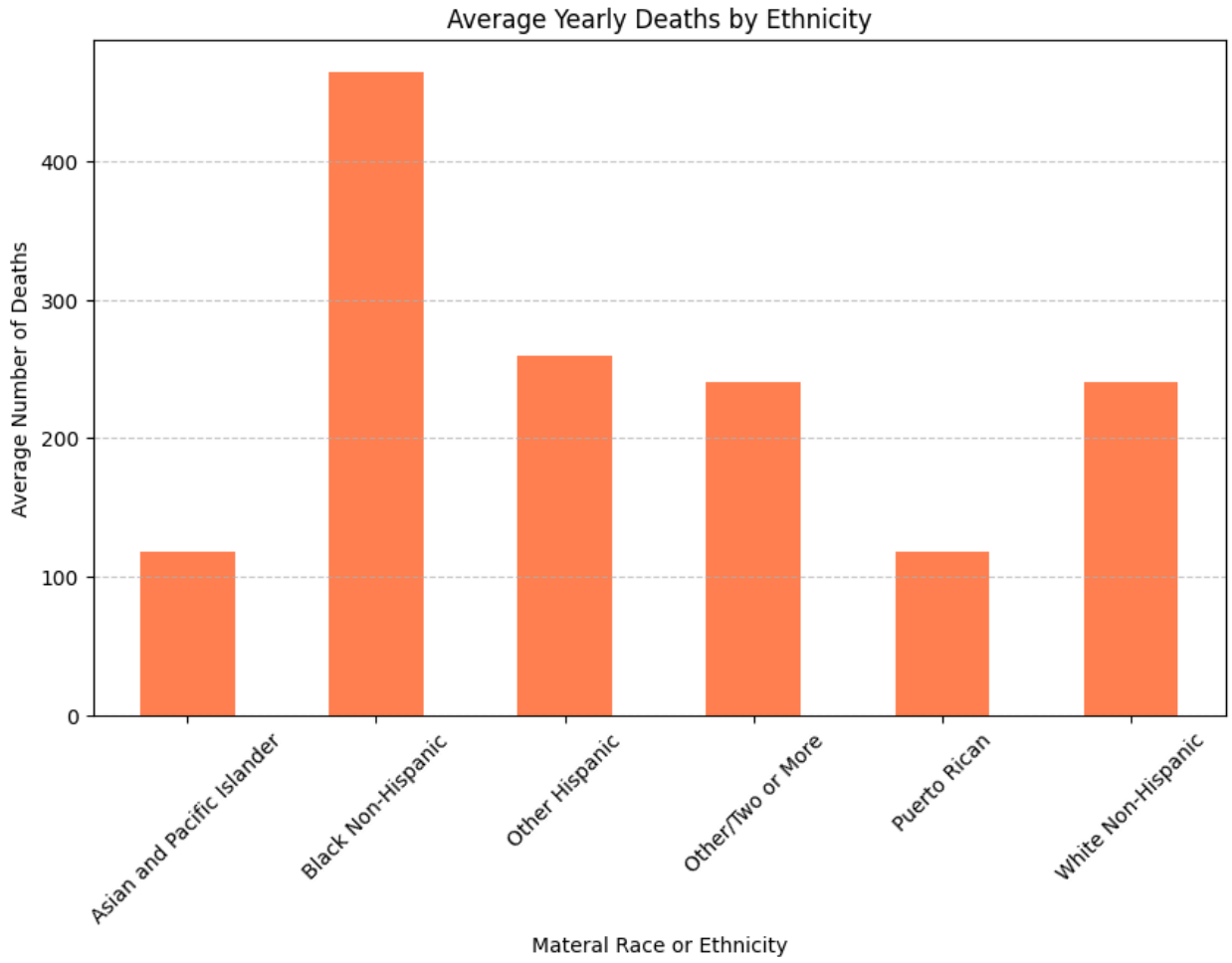
- **White Non-Hispanic**: White non-Hispanic individuals have an average of around 240.25 infant deaths per year. While lower than the average for black non-Hispanic individuals, this still represents a notable number of infant deaths, emphasizing the importance of ongoing efforts to improve infant health outcomes in this demographic.

- **Other Hispanic**: Other Hispanic individuals experience an average of approximately 259.75 infant deaths per year. Understanding the specific factors contributing to infant mortality within this demographic group is crucial for developing tailored interventions to reduce disparities in maternal and child health outcomes.

- **Asian and Pacific Islander**: This demographic group experiences an average of approximately 118 infant deaths per year. While comparatively lower than other ethnic groups, addressing the unique healthcare needs and challenges faced by Asian and Pacific Islander communities is essential for improving infant health outcomes.

- **Puerto Rican**: Puerto Rican individuals also have an average of around 118 infant deaths per year. Tailoring healthcare interventions to address the specific needs of Puerto Rican mothers and infants is critical for reducing infant mortality rates within this community.

- **Other/Two or More**: This demographic group experiences an average of approximately 240.15 infant deaths per year. Understanding the diverse characteristics and healthcare needs of this group is essential for developing culturally competent interventions to reduce infant mortality rates.



Conclusion

The analysis of average yearly infant deaths by ethnicity highlights disparities in maternal and child health outcomes among different racial and ethnic groups. Addressing these disparities requires targeted interventions, equitable access to healthcare services, and a comprehensive understanding of the unique healthcare needs of diverse communities. By prioritizing efforts to reduce infant mortality rates and improve maternal and child health outcomes for all ethnic groups, we can work towards achieving healthcare equity and ensuring every baby has the opportunity to thrive.