Welcome

Md Tanvir Hasan

Matriculation Number: 23008407

Uncovering U.S. Obesity Trends: The Socioeconomic Impact of Income and Education Levels

Agenda

Introduction

Introduction

- **Problem**: Obesity as a public health concern in the U.S.
- **Objective**: Investigate the correlation between obesity rates and socioeconomic factors (income, education) across U.S. states.
- **Significance**: Inform public health strategies to address socioeconomic disparities.

Data Sources

Data Sources

- **Dataset 1**: Nutrition, Physical Activity, and Obesity - Behavioral Risk Factor Surveillance System
- Key features: Health metrics, socioeconomic variables
- Source: CDC data portal
- **Dataset 2**: Obesity Rates and Geographic Information by State
- Key features: State-level obesity rates and demographics
- Source: Lake County GIS data

Data Visualization

Distribution of Obesity Rates

- Most states cluster around 30%.
- Histogram visual showing slight right skewness.
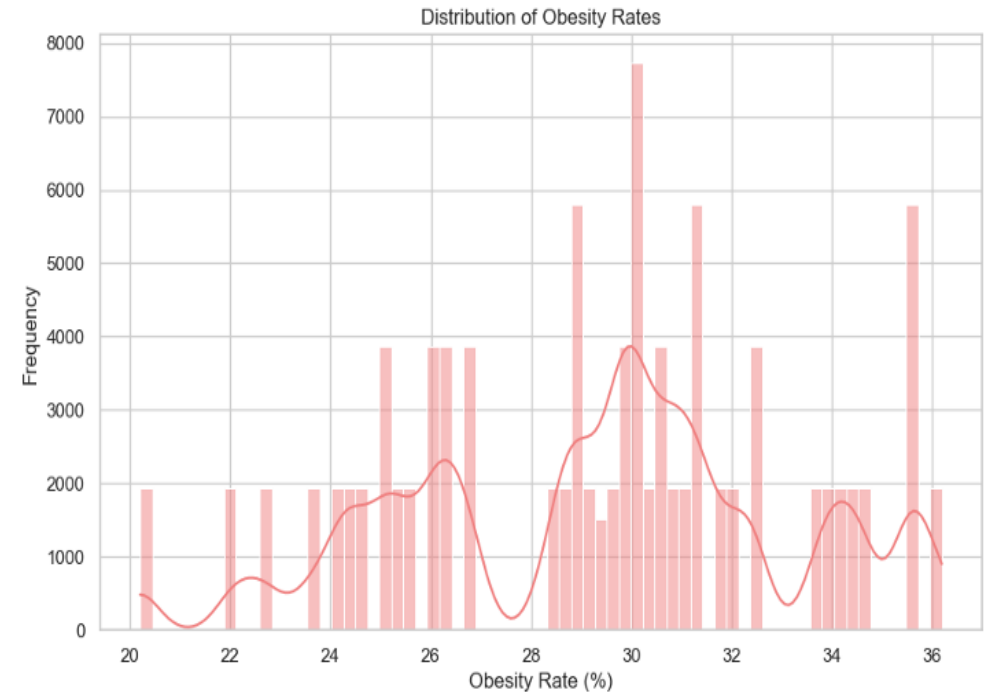- Insight: Obesity prevalence is consistent across states.

Fig 01: Distribution of Obesity Rates

Trends Over Time

Average Obesity Rates (2000–2013):

•Sharp increase up to 2013, followed by stabilization.

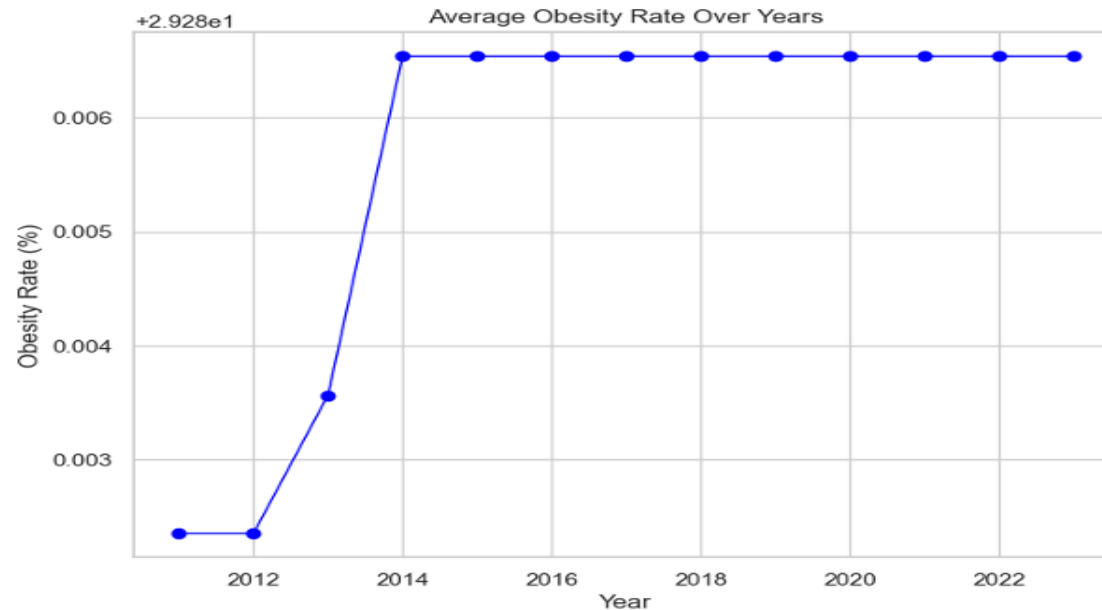•Interpretation: Public health interventions may have plateaued their effectiveness.

Fig 02: Yearly Obesity Rate Trends

Obesity and Education Level

Box Plot Insights:

• Median obesity rate (~30%) consistent across education levels.

• Limited impact of education on obesity rates.

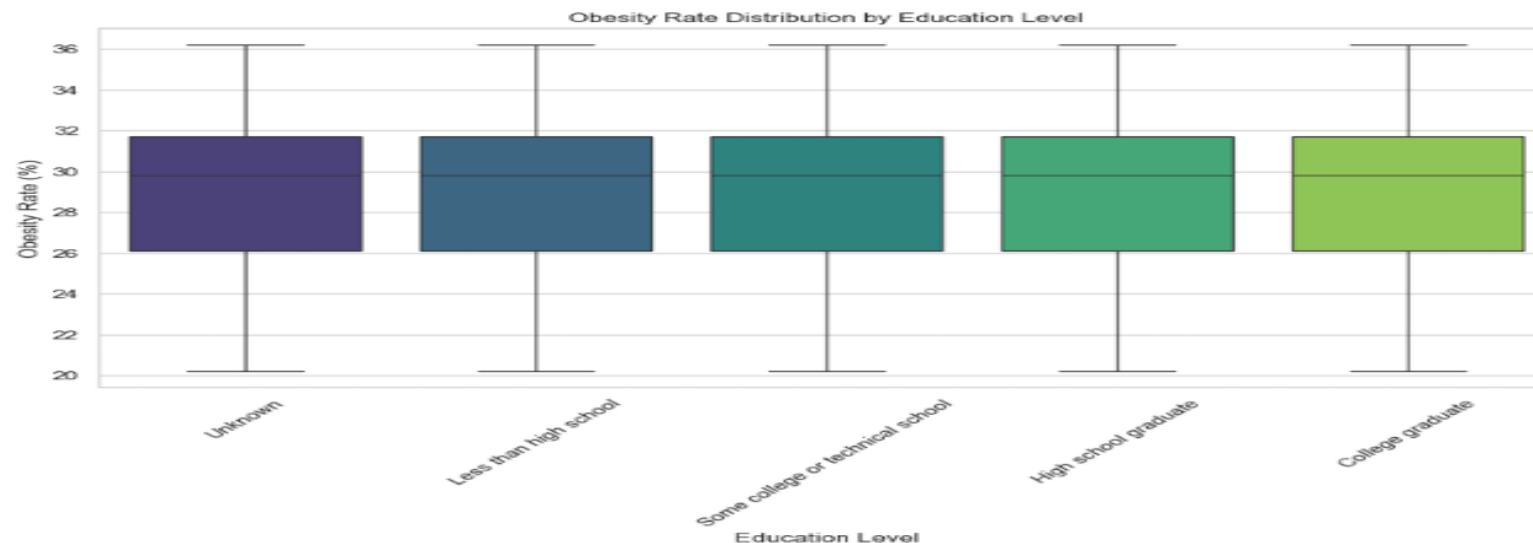• Conclusion: Other factors (e.g., lifestyle) may be more significant.

Fig 03: Obesity Rates by Education Level

Obesity and Income Level

Box Plot Insights:

- Median obesity rate (~30%) consistent across income brackets.
- Uniformity indicates minimal income influence.
- Conclusion: Broader factors need exploration.

Fig 04: Obesity Rates by Income Level

Analysis

Analysis

Heatmap Summary:

•Education-Income: Weak positive correlation (+0.17).

•Education-Obesity & Income-Obesity: Near zero correlation.

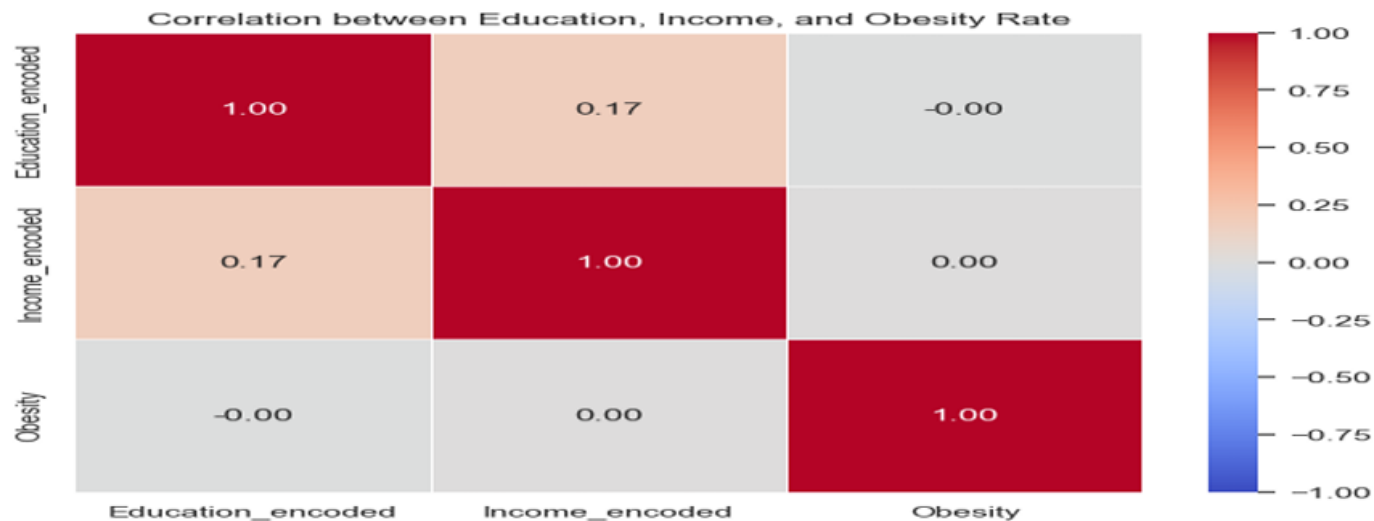•Interpretation: Socioeconomic factors have limited direct influence on obesity rates.

Fig 05: Correlation Heatmap of Obesity, Income, and Education

Conclusion

Conclusion

- Weak links between socioeconomic factors (income, education) and obesity.
- Other significant contributors: lifestyle, cultural, and environmental factors.
- **Recommendation**: Develop holistic public health strategies.

Thank you!