Income Inequality and Cigarette Smoking Behaviors in the United States

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Abstract

Problem/Objective: Greater income inequality has been associated with poorer health in many studies. However, research on income inequality and smoking behaviors has been limited. The present study examines how income inequality is associated with cigarette smoking at the state level in the United States.

Methods: We used data from the Behavioral Risk Factor Surveillance System (BRFSS), the Tobacco Use Supplement of the Current Population Survey (TUS-CPS), and the Youth Risk Behavior Surveillance System (YRBSS) to derive state-specific smoking measures for adult and adolescent populations in 1999. The Gini coefficient and Robin Hood Index, two measures of income inequality, were computed from the Census Bureau’s household income data for 1999. Cigarette price, the strength of smoke-free air legislation, and median household income were controlled as confounders. Ordinary least squares regression was utilized to examine the relationship between income inequality and several smoking measures.

Results: Among adults, income inequality was inversely associated with ever smoking prevalence, former smoking prevalence, and the quit ratio. No similar significant associations were found between income inequality and smoking behaviors among adolescents, except that ever smoking prevalence displayed a marginal positive association with income inequality. Income inequality was not associated with current smoking prevalence among adults and adolescents.

Conclusion: Our study indicates that ever smokers are less likely to have quit in states with proportionately higher levels of income inequality. The inverse association between income inequality and quitting might serve as a pathway underlying the relationship between income inequality and health.

Introduction

- Income inequality is inversely associated with health in many studies.
- Potential pathways include:
  - Underinvestment in human and social capital
  - Disruption of the social fabric
  - Psychological effects
- Income inequality is a measure of relative income level in a population.
- Relationship between income inequality and risk behaviors, such as cigarette smoking, remains unclear.
- Cigarette smoking is a leading cause of many diseases.
- Cigarette smoking may play a role in mediating the inverse relationship between income inequality and health.

Methods

- Cross-sectional design to analyze the relationship of income inequality and cigarette smoking.
- Data on cigarette smoking were computed from three U.S. population-based surveillance systems conducted in 1999:
  - The Behavioral Risk Factor Surveillance System (BRFSS)
  - The Current Population Survey (TUS-CPS)
  - The Youth Risk Behavior Surveillance System (YRBSS)
- Adult measures of smoking behaviors:
  - Current smoking prevalence
  - Ever smoking prevalence
  - Former smoking prevalence
  - Quit rates
- Adolescent measures of smoking behaviors:
  - Current smoking prevalence
  - Ever smoking prevalence
  - Former smoking prevalence
  - Quit rates
- Statistical techniques:
  - Ordinary least squares regression
  - Covariates: average price of cigarette, strength of smoke-free air legislation, and median household income
  - Stratified by sex for adult analyses

Discussion

- Income inequality reflects relative deprivation of material needs.
- Greater income inequality may produce negative psychological effects among less wealthy populations through the perception of low social status.
- Cigarette smoking may become a resort of psychological adjustment among populations with greater income inequality.
- Lowered likelihood of quitting in states with greater income inequality may be a result of the negative effects induced by income inequality.
- There was no conspicuous relationship between income inequality and smoking behaviors except ever smoking prevalence among adolescents.
- Inverse direction in the relationships of income inequality and ever smoking prevalence for adults and adolescents, which is likely due to:
  - Smoking pattern is more stable for adults than for adolescents
  - Adolescents may be less influenced by income inequality.
- Different definitions of ever smoking for adults and for adolescents.
- Potential limitations:
  - Cross-sectional design, no control over individual-level factors
  - We did not take into account all state-level covariates of cigarette smoking, such as mass media campaigns.
- We did not take into account the potential time effect of income inequality.

Conclusion

- Income inequality is inversely related to measures of quitting in the current study.
- Smoking cessation may serve as a mediator between income inequality and health.
- Eliminating income inequality may promote smoking cessation and help improve health in a society.

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