

Examining the Association between Food Insecurity, Obesity, and Educational Achievement: a Systematic Literature Review



Public Health

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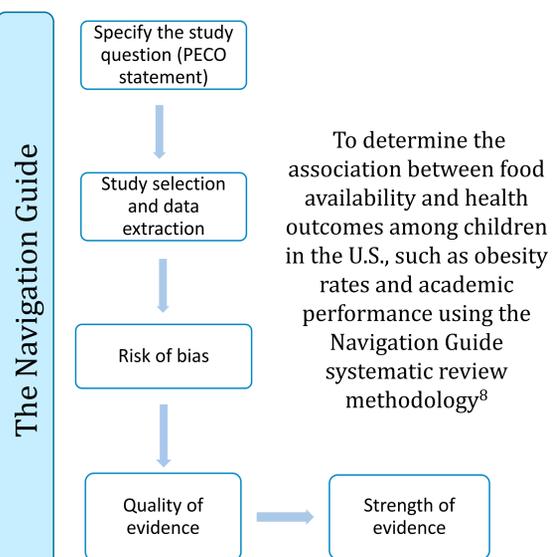
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INTRODUCTION

- Food insecurity: household-level economic and social conditions of limited or uncertain access to adequate food, and is one of the nation's leading problems in nutrition and health^{1,2}
- Food insecurity influenced by the socioeconomic factors and community issues such as large distances to supermarkets, limited transportation options, and racial disparities³
- Households with children have higher rates of food insecurity than the national average⁴
- Food insecurity is associated with poorer general health, behavioral problems, depression, and suicide ideation²
- Educational achievement: acquisition of knowledge, skills, and competencies, and persistence and retention⁵
- Students from low-income households with poor diet quality were less likely to do well in school⁶
- Various hypotheses linking food insecurity with obesity and with cognitive problems exist, but the association between food insecurity and educational achievement is less well-known⁷
- These outcomes are of particular importance: potential to have profound consequences during vulnerable periods of development

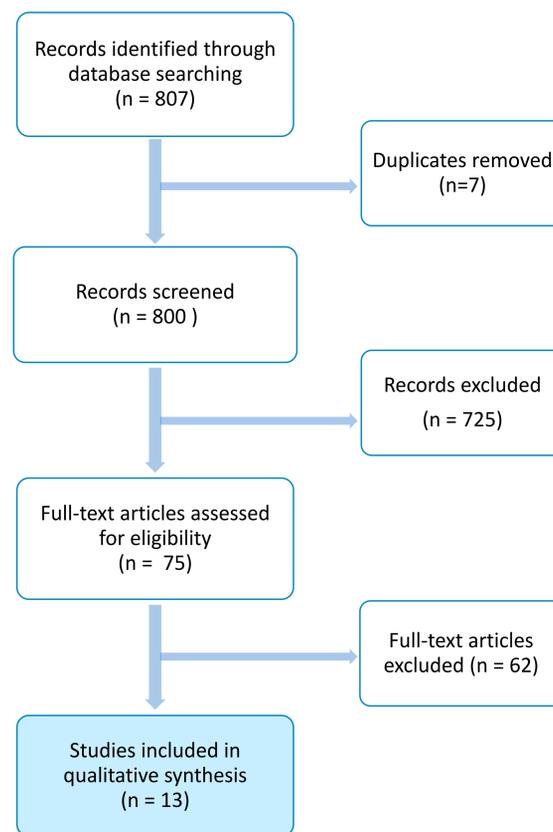
STUDY OBJECTIVE



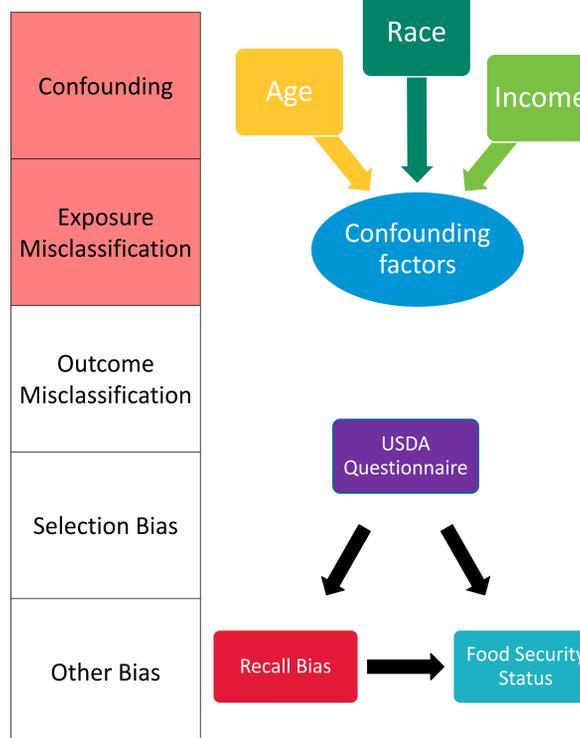
Population: children in the United States
Exposure: food insecurity
Comparator: children in the U.S. who are food secure and do not live in food deserts
Outcomes: obesity, educational achievement

METHODS

Study Selection



Risk of Bias Domains



CONCLUSIONS



• **Inadequate evidence** of correlation between food insecurity and obesity

- **Limited evidence** of correlation between food insecurity and educational achievement
- Limitations: small sample size, inconsistency in questionnaire used to evaluate food insecurity
- Potential drivers for exposure: low socioeconomic status, lack of knowledge, instability, food deserts and unsafe neighborhoods
- Despite some weaknesses, literature review indicates positive relationship between food insecurity and BMI as well as food insecurity and poorer educational achievement
- **Future research is warranted** to further evaluate relationship between food insecurity and health outcomes to fully inform policy action and mitigate the effects food insecurity

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CONTACT INFORMATION

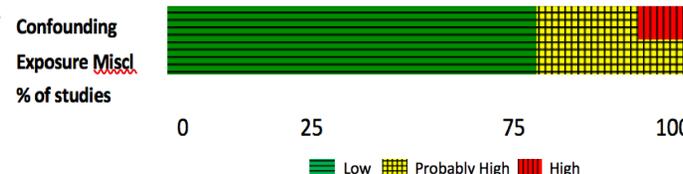
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RESULTS

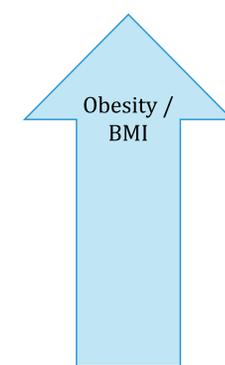
Table of Study Characteristics

Population	Body Mass Index (n=11)	Academic Performance (n=3)
Study Design	Cross-sectional (n=6), Longitudinal (n=5), Noninferiority (n=1)	Longitudinal (n=3)
Sample Size	124-16,899 participants	904-13,500 participants
Location	United States (n=12)	United States (n=3)
Exposure Variable(s)	USDA Food Insecurity Questionnaire (n=10), other survey (n=2)	USDA Food Insecurity Questionnaire (n=2), other survey (n=1)
Results	2 studies found a positive correlation (p<.05)	3 studies found a negative correlation (p<.05)

Risk of bias was rated "moderate" across all studies. The **confounding** and **exposure assessment** domains had the highest ratings due to lack of control for demographic factors and lack of a concrete definition of food insecurity.

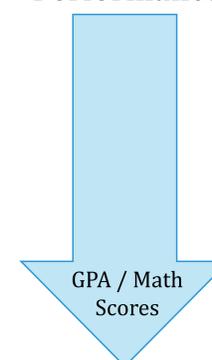


BMI Measures



Some studies found significant relationships between increased obesity and food insecurity

Academic Performance



Some studies found significant relationships between academic performance and food insecurity

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