



# The Association Between Food Insecurity and Mental Distress at the County Level



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## Introduction

- ❑ In 2024, there were more than 47 million people living in food insecurity in the United States (USDA, 2026).
- ❑ Food insecurity is not only linked with serious chronic physical health conditions, such as cancer, heart disease, and diabetes; but it has also been linked with compromised mental health (Santoro, 2026).
- ❑ Several cross-sectional and longitudinal studies done in the United States have demonstrated that food insecurity is positively associated with perceived anxiety, and depression (Bateson et al., 2025, Poulos et al., 2025).
- ❑ Data from the National Health and Nutrition Examination Survey (NHNES) and suggests that food insecurity, but not poverty, is associated with higher rates of depression and suicide attempts among adolescents (Alaimo et al., 2002).
- ❑ **Gap in the Literature:** While it has been shown that food insecure individuals are at higher risk for mental health distress, there is limited data about what these patterns look like at a county level.

## Research Questions

1. Are counties with higher levels of food insecurity more likely to have higher levels of mental distress?
2. Is food insecurity a greater predictor of mental distress than poverty level at the county level?
3. Is food insecurity still significantly related with frequent mental distress accounting for several other related variables?

## Methods

**Sample:** Respondents (n= 2,373 counties) were drawn from the Behavioral Risk Factor Surveillance System (BRFSS) of 2024, a nationally representative sample of non-institutionalized adults in the U.S., who speak either English or Spanish

### Methods:

- ❑ "Food Insecurity" among adults was measured with the question "How often in the past 12 months would you say you were worried or stressed about having enough money to buy nutritious meals?" (Range = 5.70% - 45.60%)
- ❑ "Frequent Mental Distress" among adults was measured with the question "Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?" (Range = 12.00% - 26.70%)
- ❑ For both of these measures, the BRFSS estimated the probability of frequent mental distress using a model-based approach at the county level

## Results

### Question 1 Analysis:

Food insecurity (% of food insecure people) (Beta=0.19,  $p < 0.001$ ) was significantly and positively associated with mental distress (% of mentally distressed citizens) in each county.

### Question 2 Analysis:

Poverty level (% of people below poverty) (Beta=0.22,  $p < 0.001$ ) was significantly and positively associated with mental distress (% of mentally distressed citizens) in each county.

### Question 3 Analysis:

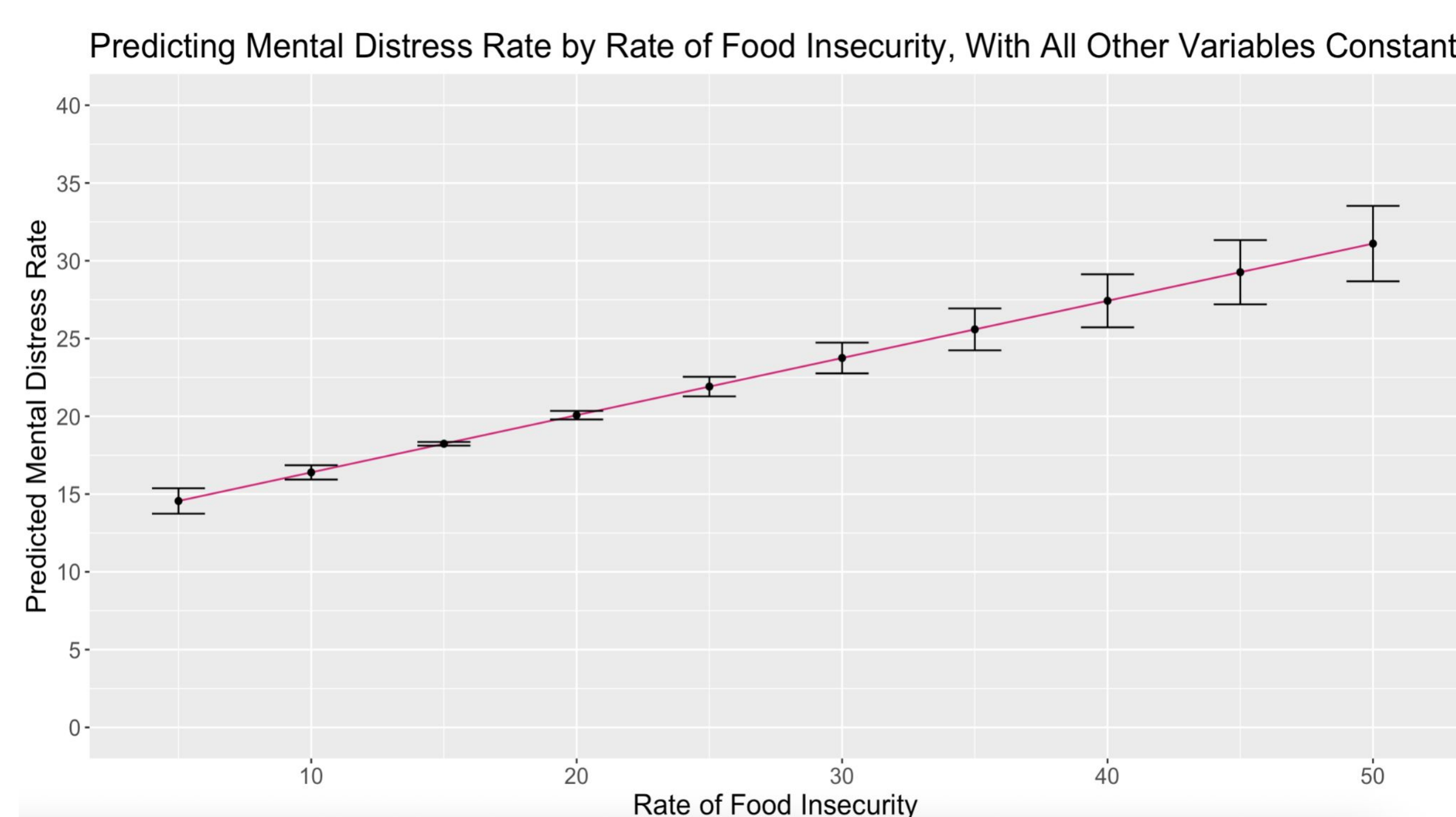
#### ❑ Figure 1

- ❑ Estimated % of people who experience frequent mental distress, based on % of people experiencing food insecurity, in a given county, when controlling for all other variables (set to averages)

#### ❑ Figure 2

- ❑ In counties with lower levels of poverty, food insecurity was a strong predictor of frequent mental distress
- ❑ In counties with high levels of poverty people tended to have high levels of mental distress regardless of food insecurity
- ❑ The relationship between food insecurity and mental distress varies based on the average poverty level of a given county

**Figure 1: Predicting Mental Distress Rate by Rate of Food Insecurity, Holding All Other Variables Constant**



**Figure 2: Predicting Mental Distress Rate by Rate of Food Insecurity, by Poverty Level**



## Discussion

- ❑ There is a significant positive relationship between food insecurity and frequent mental distress at the county level, even when related covariates are accounted for
- ❑ At the county level, food insecurity is **not** as great of a predictor of frequent mental distress as poverty level
- ❑ These findings may contribute to public health research regarding strategies for bettering mental health
- ❑ Future research is needed to determine the role of other covariates (e.g. race and gender)

## References

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