

# Food insecurity and hospitalization risk among individuals receiving maintenance hemodialysis: a secondary analysis of the PEER-HD study

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## INTRODUCTION

**Food insecurity:** lack of regular access to nutritious foods that is associated with higher interdialytic weight gain (IDWG) for those with kidney failure.

**The association of food insecurity with hospitalization rate is less established and may vary by age and sex.**

## Objectives

This study performed a secondary analysis of the PEER-HD study data to test the association between positive responses to baseline visit questions about food insecurity and subsequent count of hospitalizations and ED visits over 18 months for individuals receiving hemodialysis.

## Hypothesis

Food insecure versus secure individuals experience higher IDWG and lower adherence leading to more ED visits and hospitalizations.

## METHODS

PEER-HD study enrolled individuals receiving in-center dialysis (2019-2022)

Bronx, NY (n=140)

Nashville, TN (n=60)

PEER-HD Study Visit Questionnaire: "Do you worry about having enough money for food?"

- Yes = Food insecure
- No = Food secure

**Primary outcome variable:** Count of hospitalizations or ED visits during period of follow-up.

## Secondary outcomes:

- Mean monthly albumin
- Mean monthly IDWG
- Mean monthly minutes of dialysis missed

## Scores from validated instruments:

- Center of Epidemiologic Studies Depression Scale (CESD-10)
- Perceived Kidney Disease Self-management Scale (PKD-SMS)
- Multi-dimensional Scale of Perceived Social Support (MSPSS)
- Healthcare Quality of Life (SF-36 Health Survey)
- Kidney - Coping behaviors questionnaire (KCOPE)

## RESULTS

**Table 1: Demographic, psychosocial and clinical variable breakdown by food security status.**

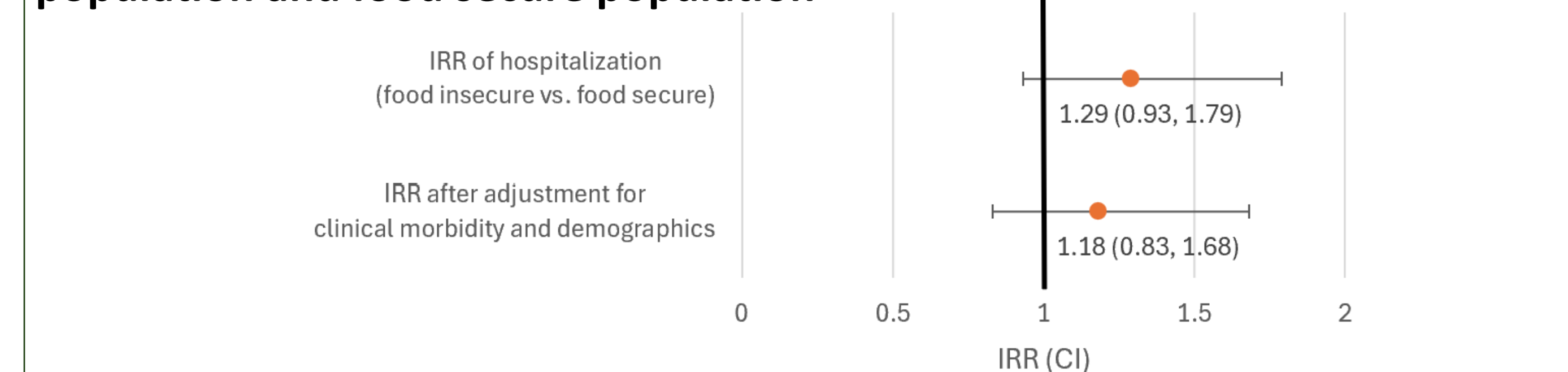
Demographic	Overall (n = 200)	Food insecure (n = 60)	Food secure (n = 140)	P value
Sex (n, %)				
•Female	102 (51.0)	30 (50.0)	72 (51.4)	0.9
•Male	98 (49.0)	30 (50.0)	68 (48.6)	
Age (mean, SD)	54.7 (13.2)	52.4 (11.9)	55.6 (13.7)	0.1
How many times approximately have you been to the ED in the last year? (median, IQR)	2(1,3)	2 (1, 4)	2 (1, 3)	0.6
Have you gone to the ED in the last year? (n = 197) (n, %)				0.2
No	51 (25.9)	11 (19.0)	40 (28.8)	
Yes	146 (74.1)	47 (81.0)	99 (71.2)	
# of hospitalizations in past year (median, IQR)	1 (0, 3)	2 (0, 4)	1 (0, 3)	0.3

**Table 2: Difference in primary and secondary outcomes by food security status.**

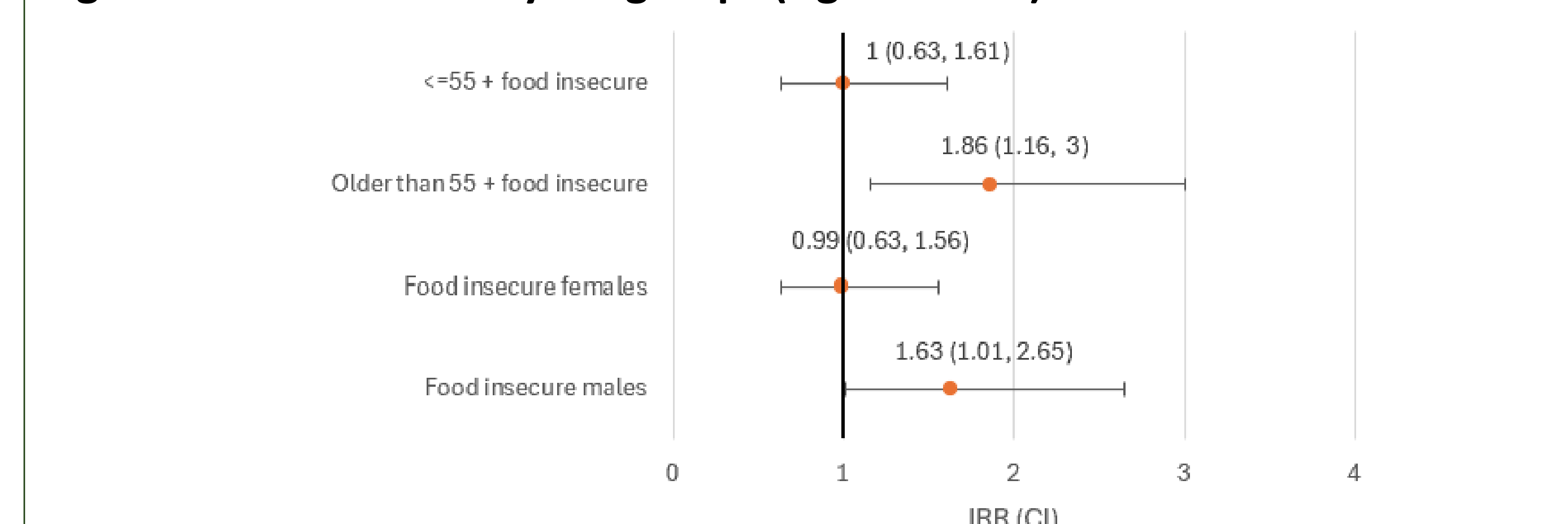
Outcome	Overall (n = 200)	Food insecure (n = 60)	Food secure (n = 140)	P value
# of Hospitalizations or ED Visits per month of follow-up (median, IQR)*	0.2 (0.08, 0.4)	0.3 (0.09, 0.50)	0.2 (0.1, 0.4)	0.04
# of Months enrolled in study (median, IQR)	11 (8, 12)	11 (8, 12)	11 (7, 124)	0.2
Albumin (median, IQR)	3.9 (3.6, 4.1)	3.8 (3.3,4.0)	3.9 (3.7,4.1)	0.02
Interdialytic weight gain (median, IQR)	2.2 (1.6, 2.9)	2.7(2.1, 3.3)	2.5 (1.9, 3.2)	0.6
Non-adherence (number of monthly dialysis minutes missed) (median, IQR)	101.5 (26.0, 225.0)	90.4 (21.2, 218.7)	114.8 (28.1, 227.7)	0.5

\* 6 participants dropped out before intervention period

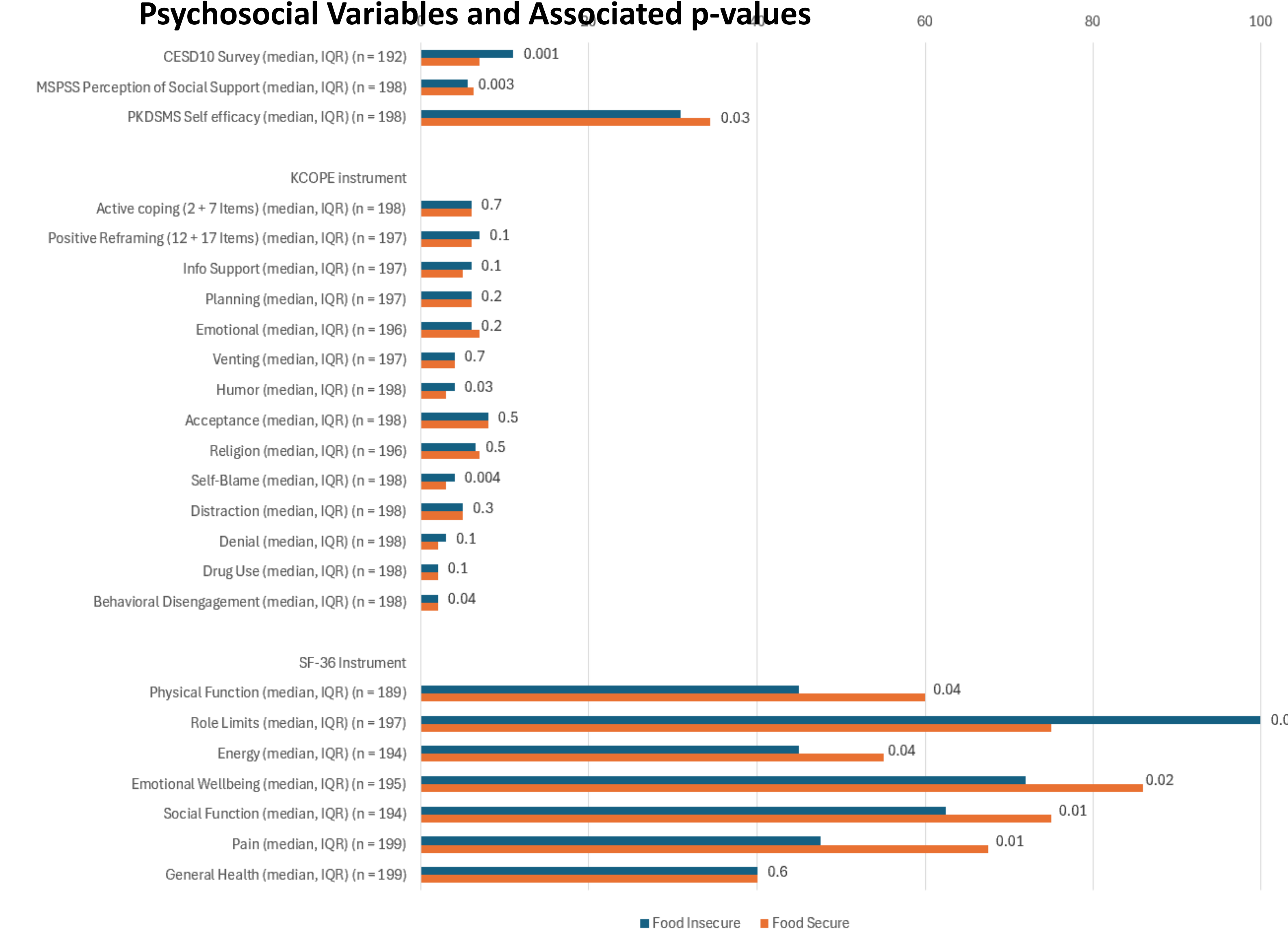
**Figure 1: IRR of hospitalizations and ED visits amongst food insecure population and food secure population**



**Figure 2: IRR stratified by subgroups (Age and Sex)**



**Figure 3: Scores by Food Secure Status on Validated Instruments Measuring Psychosocial Variables and Associated p-values**



## CONCLUSIONS & DISCUSSION

### Our study:

- Did not show a significant association between food insecurity and rate of hospitalization or ED visits for individuals receiving maintenance dialysis.
- Prespecified stratified analysis showed a **significant association** between food insecurity and primary outcome among individuals older than 55 years and men.
- The higher trend of hospitalizations and ED visits among the food insecure was significantly attenuated when we adjusted for scores on instruments measuring depression, self-efficacy, perception of social support and emotional and physical functional status
  - ...and further attenuated when we adjusted for income, education and IDWG.
- There were **significant associations** for psychosocial instrument analysis (Figure 3). Food insecure patients have higher rates of **depression** and lower perception of **social support, self-efficacy, physical function, emotional well-being, and social function** than individuals who are food secure.

### Limitations:

- Small sample size
- Lack of power in stratified analysis

### THE FUTURE:

Our study contributes to a further understanding of the impact of food insecurity for patients living with kidney failure treated with hemodialysis and explores complex contributions of psychosocial and health status.



References: Scan here