

# Food Insecurity and Overweight/Obesity Associated with Poor Diet Quality During COVID-19 Pandemic

## Abstract Track #4: Population Health

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**Background:** Food insecurity is associated with poor diet quality and an increased risk for obesity. In this study, we tested the following hypotheses: 1) college students who are overweight/obese (BMI  $\geq 25$  kg/m<sup>2</sup>) are more likely to be food insecure than students who are normal weight (BMI  $< 25$  kg/m<sup>2</sup>), 2) college students who are food insecure and overweight/obese have lower diet quality than food-secure students who are normal weight during the COVID-19 pandemic.

**Methods:** We administered an online survey to 651 college students in Texas, US in May 2020. Food security was assessed using validated surveys. BMI was calculated from self-reported height and weight. Healthy Eating Index (HEI) scores (measure of diet quality) were derived from 24-h dietary recalls (ASA24 Dietary Assessment Tool). Prevalence of food insecurity by BMI was assessed by Chi-squared test. Two-way ANOVA assessed the impact of food security, BMI, and food security x BMI on HEI.

**Results:** In 332 students (94% female, 52% white) who completed the food security survey and dietary recall, 28.9% were food insecure. Students who were overweight/obese were more likely to be food insecure compared to students who were normal weight (35.7% vs. 24.8%,  $p=0.03$ ). Food-secure students had higher HEI scores than students who were food insecure ( $55.0 \pm 14.2$  vs.  $51.5 \pm 14.5$ ,  $p=0.04$ ). Students who were normal weight had higher HEI scores than students who were overweight/obese ( $56.0 \pm 15.0$  vs.  $50.6 \pm 12.7$ ,  $p=0.001$ ). While the interaction between food security and BMI was not significant ( $p=0.31$ ), students who were food secure and normal weight had higher HEI scores than students who were food insecure and overweight/obese (Mean difference.: +7.7, 95% CI: 1.9, 13.4;  $p<0.001$ ).

**Conclusion:** College students with overweight/obesity were more likely to be food insecure during the COVID-19 pandemic. In addition, students who were food insecure and overweight/obese had lower HEI scores than students who were food secure and normal weight.

**Keywords:** food security, hunger-obesity paradox, healthy eating index.