

Perceived Food Security and Dietary Quality Among Urban Youth During the COVID-19 Pandemic

Christine St. Pierre, RDN, Win Guan, PhD, Jamison Merrill, MSc, Jennifer Sacheck, PhD

BACKGROUND

- Early estimates indicate that food security among households with children as much as tripled from February to May 2020 due to COVID-19–related economic disruptions.¹
- Youth from households with lower incomes, particularly those who are black and Hispanic, are at greater risk for childhood obesity and adverse health outcomes and are more likely to have a lower quality dietary pattern.²
- Associations between food insecurity and dietary quality among adolescents have not been clearly established and the acute effects of COVID-19 on dietary quality among youth in low-income settings are not well-known.
- The Creating Opportunities for Adolescents through Coaching, Healthy Eating, and Sports (COACHES) Study aims to understand the effectiveness of an intervention that trains school-based, near-peer coaches in nutrition, physical activity, and sports-based youth development coaching strategies in improving the health of youth from low-income households in New Orleans, LA.

OBJECTIVES

- 1) To assess the level of perceived food security during the pandemic among middle school youth participating in the COACHES study in lower-income middle schools (n=5);
- 2) To assess changes between pre-pandemic baseline and Fall 2020 in consumption of key food groups of concern, namely sugar-sweetened beverages (SSBs), fruits and vegetables, among COACHES youth;
- 3) To examine the association between youth-perceived food security and consumption of the key food groups assessed.

METHODS

Participants:

- Students in 6th and 7th grade from 5 New Orleans public charter schools

Measures:

- **Demographics, body mass index, and dietary intake** – assessed pre-pandemic (early 2020) and again in Fall 2020
- **Perceived food security and dietary intake during pandemic - CoRoNaVirus Health Impact Survey for Youth (COVID CRISIS)** administered Fall 2020

Data Analysis

- Binary outcome variables created for daily servings of: 1) SSBs and 2) fruit and vegetables.
- Logistic regression analyses examined the relationship between youth-reported food security and self-reported dietary intake, adjusting for sex and weight status.

RESULTS

COVID CRISIS Descriptive Statistics:

- Study subjects (n=67): 100% Black/African American, 53% Female, 42% overweight/obese, 11.7 +/- 0.8 years of age
- **31%** worried about the amount or type of food available to them at home
 - Female > male (36.4% vs 25.0%)
 - Normal weight > overweight/obese (41.2% vs 18.5%; χ^2 p value=0.057)
- 65% of subjects did not consume 4 or more servings of fruits and vegetables daily
 - Female > male (39.4% vs 31.0%)
 - Overweight/obese > normal weight youth (38.5% vs 33.3%)
- 69% drank 2 or more sugar-sweetened beverages daily
 - Female > male (81.8% vs 60.0%; χ^2 p value=0.056)
 - Normal weight > overweight/obese youth (75.0% vs 66.7%)

Pre-pandemic Dietary Intake

- 37% did not consume fruit daily
- 50% did not consume vegetables daily
- 60% drank one or more SSBs daily

Food Insecurity and Fruit & Vegetable Intake

Youth reporting food insecurity had a 27% lower odds of consuming 4 or more servings of fruits and vegetables daily (*NS*).

Odds of eating four or more servings of fruits and vegetables daily		
Variable	Odds Ratio (95% CI)	P value
Sex (female)	1.44 (0.48, 4.25)	0.51
Weight status (overweight/obese)	1.01 (0.33, 3.07)	0.98
Food security status (food insecure)	0.73 (0.21, 2.52)	0.62

Food Insecurity and Sugar-Sweetened Beverage Intake

Youth reporting food insecurity had 63% higher odds of consuming 2 or more SSBs daily (*NS*).

Odds of drinking two or more SSBs daily		
Variable	Odds Ratio (95% CI)	P value
Sex (female)	3.09 (0.96, 9.98)	0.06
Weight status (overweight/obese)	0.85 (0.26, 2.82)	0.80
Food security status (food insecure)	1.63 (0.41, 6.40)	0.48

Acknowledgements: The COACHES study is a collaboration between The George Washington University and Up2Us Sports and is funded by the Department of Health and Human Services Office of Minority Health -CPIMPO191186

CONCLUSIONS

Analysis of the COVID CRISIS data provide important insights into the nutrition status of at-risk youth during the pandemic. Specifically:

1. Nearly 1 in 3 students in this sample of low-income youth reported worrying about the availability of food in their home, an even higher proportion than the nationwide data for families with children experiencing food insecurity during the pandemic.
2. Pre-pandemic, the majority of subjects were already drinking SSBs on a daily basis, and a sizeable portion were not eating fruits or vegetables daily, much less consuming the recommended five servings a day.
3. SSB intake increased during the pandemic, but unexpectedly, fruit and vegetable intake also increased among this population.
4. While not statistically significant, trends indicated that food insecurity may have negatively affected dietary quality.

PUBLIC HEALTH IMPLICATIONS

Results of this research indicate the need for:

- Larger ongoing studies to more fully evaluate the link between food insecurity and dietary quality of urban, low-income youth and understand the overall health status of youth emerging from the COVID-19 pandemic.
- Context-informed nutrition interventions aimed at improving dietary quality among this population, particularly reducing SSB consumption and increasing fruit and vegetable intake.
- Expansion of youth health interventions like COACHES that provide context-specific training for teachers, coaches, or other mentors working with at-risk youth in nutrition and physical activity settings.
- Maintain robust nutrition assistance and child nutrition programs that support families during difficult economic times.

REFERENCES

1. Schanzenbach D, Pitts A. . How much has food insecurity risen? Evidence from the Census Household Pulse Survey. Evanston, IL: Institute for Policy Research Rapid Research Report; 2020. <https://www.ipr.northwestern.edu/documents/reports/ipr-rapid-research-reports-pulse-hh-data-10-june-2020.pdf>. Published June 2020. Accessed March 25, 2021.
2. Chen L, Zhu H, Gutin B, Dong Y. Race, Gender, Family Structure, Socioeconomic Status, Dietary Patterns, and Cardiovascular Health in Adolescents. *Curr Dev Nutr*. 2019;3(11):nzz117. Published 2019 Oct 21. doi:10.1093/cdn/nzz117