

Health Behavior Changes and Mental Health during the COVID-19 Crisis in Food Insecure College Students

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INTRODUCTION

The COVID-19 pandemic has had impactful and possibly long-term effects on the lives of college students. This may be particularly challenging for food insecure students, who are at a higher risk for negative effects of the COVID-19 pandemic.

Purpose: The purpose of this study was to determine the effects of COVID-19 on the health behaviors and mental health of food insecure college students.

STUDY DESIGN

Design: A mixed-methods study design was used to determine the changes in mental health and health behaviors of food insecure college students. Students completed 2 surveys over 6-months, pre-and post-COVID-19. Surveys were composed of validated measures and open-ended questions. Participants were asked to describe their demographics, fruit and vegetable intake, physical activity, stress, and life satisfaction.

Measures:

BMI: Reported height and weight calculated using weight (kg)/[height (m)]²

Food security (FS): 6-item USDA Short Food Security Survey ($\alpha=.87$)

Fruit and vegetable intake: National Cancer Institute (NCI) Fruit and Vegetable Screener

Perceived stress: 10-item Cohen's Perceived Stress Scale ($\alpha=.82$)

Life Satisfaction: 5-item Deiner's Satisfaction with Life Scale ($\alpha=.80$)

Statistical Analysis: Descriptive statistics and t-tests were conducted using SPSS v26. Diet and physical activity open-ended questions were categorized into positive or negative changes due to COVID-19. Responses underwent a thematic review and were categorized into themes.

Participants: Food insecure students were recruited from Florida International University (n=41). Participants were female (93%), white Caucasian (43%) and Hispanic (60%), and had normal BMI (53%).

Table 1: Descriptive Statistics

		N (41)	%
Gender	Male	3	7.5
	Female	37	92.5
BMI	Underweight	4	10
	Normal	21	52.5
	Overweight	7	17.5
	Obese	8	20
FS Score	Very Low	13	2.5
	Low	25	62.5
	High	2	5
Race	African American	8	20
	Caribbean Islander	9	22.5
	White Caucasian	17	42.5
	Other	6	15
Ethnicity	Hispanic	24	60
	Non-Hispanic	16	40

RESULTS

Results: Post COVID-19, participants significantly decreased their fruit and vegetable intake ($t=-2.12$, $p=.04$). In open-ended questions, participants had both positive and negative changes in health behaviors, with the majority of comments indicating negative changes in diet quality, quantity and amount of physical activity. Participants also increased their perceived stress ($t=2.37$, $p=.02$) and decreased life satisfaction ($t=-3.03$, $p<.01$) but indicated positive changes in open ended questions including; getting closer to family and friends, improved work and school, increased mindfulness and time to enjoy activities.

Table 2: Pre/Post t-test

	Mean (Pre)	Mean (Post)	t	p
Daily Servings of Fruit and Vegetables	2.68 (1.16)	2.13 (1.30)	-2.12	0.041
Perceived Stress Score	19.70 (7.39)	22.62 (7.18)	-3.03	0.004
Life Satisfaction Score	24.10 (6.67)	22.10 (5.99)	2.371	0.023

Table 3: Thematic Review

Theme	Example
Diet/Physical Activity	• It has gotten so much worse, I would walk so much at FIU and in general and I hardly do at all now
	• I believe I have turned to a more unhealthy habit of eating, such as skipping meals and bingeing food from take out/eating out
Getting closer to family and friends	• My family is suddenly much more connected, and my friends group from my previous school has also instituted weekly video calls to keep in touch, so we are actually much more connected now than we used to be.
Improved work and school	• My grades were a bit better as I didn't have to worry about roommates. I moved out of state, still got my diploma.
Increased mindfulness	• I have become more mindful of the foods I'm eating and making sure to get exercise every day
	• I care less about my physical appearance and more about my health, mindset, and how I treat others. A lot of people have it worse than me, so I've been working on my patience and kindness. I feel as though I'm a nicer person overall.
Time to enjoy activities	• Since I had more time on my hands, I was able to do things I wanted to do but wasn't able to do before. I began to paint, did a mural on my wall, cooked, and more.
	• I have time to work on my portfolio, exercise and bake more

CONCLUSION

COVID-19 had both positive and detrimental effects on diet, physical activity, stress and life satisfaction of food insecure students. While overall measures declined, students indicated that the pandemic gave them an opportunity to work on personal relationships and mental health.