

Access to Fresh Produce among SNAP-Eligible Virginians during COVID-19

Sonal Sathe, PhD Student,¹ Sarah Misyak, PhD, MPH,^{1,2} and Elena L. Serrano, PhD^{1,2}

¹Department of Human Nutrition, Foods, and Exercise; ²Virginia Family Nutrition Program (EFNEP, SNAP-Ed); Virginia Tech, Blacksburg, VA, USA 24061-0430

Abstract

Background: Restrictions from the COVID-19 pandemic resulted in disruptions in the food supply and dramatic increases in food insecurity

Objective: To assess food access, particularly fresh produce, among SNAP-eligible Virginians

Study Design, Setting, and Participants: An online Qualtrics panels cross-sectional survey was conducted with SNAP-eligible Virginians aged 18 and older in November-December 2020

Measurable Outcome and Analysis: Survey questions included socio-demographic information and questions about access to, and quality of, fresh produce and low-fat products within the respondents' neighborhoods. Descriptive statistics were computed

Results: Of 973 survey responses, 228 (23.4%) respondents reported difficulties accessing fresh produce; 215 (22.1%) difficulty accessing fresh produce of high quality; and 233 (23.9%) issues with breadth of produce selection. A lower proportion reported difficulty accessing low-fat products (185, 19.0%) and breadth of low-fat product selection (184, 19.0%)

Conclusions: Overall, one-quarter of survey respondents reported challenges with accessing produce. While we did not assess changes as a result of COVID-19, efforts to support access to nutritious options is a critical component of promoting food security and community food security. These results can inform and tailor coordinated programs that include nutrition education programs and policy, systems, and environmental change initiatives. Follow-up research is warranted to determine ongoing challenges with food access among adults and households with lower incomes.

Introduction

The *Dietary Guidelines for Americans 2020-2025* recommend focusing on meeting food groups needs with nutrient-dense foods and beverages, including vegetables, fruits, lean meats, and fat-free and low-fat dairy.¹ Most individuals do not meet the recommended amounts of these foods in their dietary intake.² Accessing affordable and nutritious foods has been found to be more difficult for individuals with limited incomes, such as individuals who are considered SNAP-eligible. These challenges were exacerbated by the COVID-19 pandemic.³ The goal of this study was to explore perceptions of access and availability of SNAP-eligible Virginia residents to safe and nutritious foods during the COVID-19 pandemic, particularly fresh produce (fruits and vegetables) and low-fat products. The results provide insight into challenges facing SNAP-eligible audiences in achieving national dietary recommendations and can inform SNAP-Ed and EFNEP educational efforts.

Methods

Setting and Participants

Eligibility criteria included: English proficiency; income eligible for SNAP; 18 years old or older; and resident of Virginia. The survey was administered online via Qualtrics survey software (Orem, Utah, U.S., released 2020), using existing panels. Responses were anonymous. Qualtrics was equipped with a checkpoint system to identify any potential bot entries. The Virginia Tech Institutional Review Board considered the study "exempt." Informed, voluntary consent was implied by completion of the survey. The survey was administered from November 30, 2020, to December 31, 2020.

Measures

Survey questions included the following: socio-demographic information; food security status;⁴ and perception of access and availability of fresh fruit and vegetable/produce and low-fat products (NEMS-P).⁵ See Table 2 for questions and response categories for the access and availability questions.

Data Analysis

Food security module item responses, including partially missing data, were coded following the Guide to Measuring Household Food Security.^{4,6} Frequencies and means were computed for each measure of food access and availability. Multinomial logistic regression was utilized to predict different socio-demographics (age, gender, race, ethnicity, education, income, food security, and SNAP participation) and the cumulative score for food access and availability ($p < .05$). Principal component (factor) analysis, using Varimax rotation, was conducted to test for underlying factors and clusters that are meaningful. The number of factors was determined on the basis of those with eigenvalues ≥ 1 . All analyses were conducted using IBM SPSS Statistics for Windows (Released 2021, Version 28.0. Armonk, NY: IBM Corp.).

Results

Survey Participants. A total of 973 respondents met the requirements for inclusion for this study, with the majority reporting being female, white, not Hispanic/Latino(a), and with incomes less than \$25,000/year. See Table 1.

Socio-Demographic Factors and Cumulative Food Access and Availability Score. Income, ethnicity, and food security status were the only factors found to be statistically significant variables ($p < .05$) in the cumulative food access and availability score. Respondents with incomes over \$25,000 who reported not being Hispanic/Latino and having marginal or high food security status reported overall higher agreement with statements about food access and availability. The mean cumulative food access and availability score increased significantly as food security status increased. See Figure 1.

Table 1: Socio-Demographic Characteristics of Survey Respondents, Mean Cumulative Food Access & Availability S (n=973)

Socio-Demographic Characteristic	Number (%)	Mean Cumulative Food Access & Availability Score (Range: 6-30)	p-value*
Age	18-49 years	808 (83.0)	27.5
	50 years+	165 (17.0)	29.4
Gender	Female	694 (71.3)	27.7
	Male	263 (27.0)	28.3
Education	12 th grade or less	684 (70.0)	27.6
	More than 12 th grade	289 (30.0)	28.5
Income	$\leq \$25,000/\text{year}$	503 (51.7)	27.3
	$> \$25,000/\text{year}$	470 (48.3)	28.5
Race	White	620 (63.7)	28.2
	Black/African American	221 (22.7)	27.6
Ethnicity	Hispanic/Latino(a)	83 (8.5)	27.0
	Not Hispanic/Latino(a)	890 (91.5)	27.9
Current SNAP Participation	Not participating	523 (53.8)	27.9
	Participating	450 (46.2)	27.8
Food Security Status	Very low	480 (49.3)	26.5
	Low	175 (18.0)	28.1
	Marginal	137 (14.1)	29.3
	High	181 (18.6)	30.1

Figure 1: Mean Cumulative Food Access & Availability Score by Food Security Status (n=973)



Access and Availability. Respondents indicated a slightly higher agreement with being able to purchase low-fat products in their neighborhood than other dimensions (mean 3.57). Lower agreements were observed for selection of fresh fruits and vegetables (mean 3.40) and quality of produce and low-fat products (mean 3.43). See Table 2.

Factor Analysis. Loading values for each factor exceeded 0.70 and were positive, indicating that each factor had a strong effect on the principal component. Only one component was extracted, which accounted for 67.7% of the variance, and included all of the items. The results indicate that all items adequately represented the domains of interest, were all important, and demonstrated a high intercorrelation.

Table 2: Number, Percentage, Mean Score, and Loading Value for Each Measure of Food Accessibility & Availability Level (n=973)

Food Access and Availability Question	Number (%) who reported strongly disagree or disagree to this statement	Mean Score (range 1-5)	Principal Component Analysis Loading Value
It is easy to buy fresh fruits and vegetables in my neighborhood.	228 (23.4)	3.52	.791
There is a large selection of fresh fruits and vegetables available in my neighborhood.	215 (22.1)	3.40	.820
The fresh produce in my neighborhood is of high quality.	233 (23.9)	3.43	.840
It is easy to buy low-fat products, such as low-fat milk or lean meats, in my neighborhood.	185 (19.0)	3.57	.832
The low-fat products in my neighborhood are of high quality.	175 (18.0)	3.43	.830
There is a large selection of low-fat products available in my neighborhood.	185 (19.0)	3.45	.823

Responses: 1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree

Discussion and Conclusions

The results from this study highlight challenges that individuals with lower incomes face related to food access, selection, and quality of nutritious products within their neighborhoods, particularly among individuals who report being Hispanic/Latino(a) or food insecure. Further research is warranted to explore disparities in food access in the broader context of nutrition security.

Limitations. This study was cross-sectional and limited to SNAP-eligible audiences and is therefore not generalizable to a larger population. This smaller study was also part of a larger study designed to assess food security status during COVID-19. To limit respondent burden, a more comprehensive review of all food access and availability domains and recommended food groups could not be assessed.

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Contributions

S. Misyak (SM), E. Serrano (ES), D. Storen (DSS), A. Gregg (AG), and E. Leftwich (EL) designed the survey. S. Misyak and E. Serrano led data collection in partnership with Qualtrics. ES cleaned and coded the data. ES conducted all data and statistical analysis and finalized the poster. S. Sathe contributed to preliminary data analysis and writing of the abstract and poster.

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