

# SNAP Participants and High Levels of Food Insecurity in the Early Stages of the COVID-19 Pandemic

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## Abstract

**Objectives:** The coronavirus disease 2019 (COVID-19) pandemic has disproportionately strained households experiencing poverty, particularly Black and Latino households. Food insecurity, which entails having limited or uncertain access to a sufficient quantity of nutritious food, is a key pandemic-related consequence. We examined how people enrolled in the Supplemental Nutrition Assistance Program (SNAP) have been affected by the pandemic, particularly Black participants and participants residing in food deserts.

**Methods:** Using survey data from a longitudinal cohort study of predominantly Black low-income adults aged  $\geq 18$  residing in urban food deserts in Pittsburgh, Pennsylvania, we examined changes in food insecurity and SNAP participation before COVID-19 (2018) and early in the COVID-19 pandemic (March–May 2020). We modeled changes in food insecurity from 2018 to 2020 via covariate-adjusted logistic regression.

**Results:** Food insecurity increased significantly among participants enrolled in SNAP and surveyed in both 2018 and 2020 (from 25.9% in 2018 to 46.9% in 2020;  $P < .001$ ). Compared with cohort participants not enrolled in SNAP at both points, cohort participants enrolled in SNAP in 2018 and 2020 had the highest rates of using a food bank in 2020 (44.4%) and being newly food insecure in 2020 (28.9%) (ie, they were food insecure in 2020 but not in 2018).

**Conclusions:** Food insecurity during the COVID-19 pandemic increased among low-income Black households enrolled in SNAP and residing in a food desert. Public health recovery efforts might focus on modifying SNAP to improve the food security of people experiencing poverty.

## Keywords

food security, COVID-19, Supplemental Nutrition Assistance Program, racial/ethnic disparities, nutrition

The economic effects of the coronavirus disease 2019 (COVID-19) pandemic have caused an unprecedented strain on household finances and, in turn, food purchasing. Census data from December 2020 suggest that more than 14% of US households, 24% of Black households, and 21% of Latino households are still struggling to purchase food.<sup>1</sup> These difficulties exceed prepandemic levels of food insecurity (ie, having limited or uncertain access to a sufficient quantity of affordable, nutritious food), which affected about 10.5% (13.7 million) of US households in 2019.<sup>2</sup> These changes are likely a consequence of job loss and reduced earnings as a result of business closures.

People experiencing poverty (ie, people living near the federal poverty guidelines, which in 2020 was \$26 200 for a family

of 4), households that were already food insecure, households with children, and Black and Latino households have been disproportionately affected by COVID-19 incidence, mortality, and

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pandemic-related income loss.<sup>3-7</sup> A national survey fielded during the pandemic found that Black (42%) and Latino (40%) households were more likely to be food insecure than White households (27%).<sup>8</sup> These findings are consistent with studies of past economic downturns, which demonstrated especially severe economic consequences among low-income workers of color.<sup>9</sup> Food insecurity is both a key pandemic-related consequence and an important risk factor for adverse physical and mental health outcomes.<sup>10</sup> Even before the COVID-19 pandemic, households with incomes below 185% of the federal poverty guidelines were almost twice as likely to be food insecure (27.6%) as all US households (10.5%), and non-Hispanic Black households were more than twice as likely to be food insecure (19.1%) as non-Hispanic White households (7.9%).<sup>2</sup> Anecdotal reporting suggests that COVID-19–related food insecurity may be especially severe among households residing in neighborhoods with limited access to healthy and affordable food (ie, food deserts).<sup>11</sup> For example, people residing in food deserts may not have access to a personal vehicle and, therefore, may be especially vulnerable to pandemic-related disruptions in public transportation. These factors may lead food-desert residents to become more food insecure during the pandemic. However, to our knowledge, no studies have focused on households enrolled in the US Department of Agriculture’s (USDA’s) Supplemental Nutrition Assistance Program (SNAP) in such neighborhoods.

SNAP is the largest domestic food and nutrition program in the United States.<sup>12</sup> Its stated purpose is to provide nutrition benefits to supplement the food budget of people in the United States experiencing financial difficulty<sup>12</sup>; it also functions as an economic stabilizer during periods of hardship.<sup>13</sup> SNAP plays an important role in improving food security, which entails having access at all times to enough food for an active, healthy life.<sup>14</sup> In April 2020, 42.9 million people in the United States were enrolled in the program.<sup>2</sup> During the COVID-19 pandemic, SNAP has played an important role in delivering additional benefits to populations that are especially vulnerable to food insecurity and economic distress.<sup>15</sup>

Because of the COVID-19 pandemic, the USDA granted states permission to suspend certain enrollment and recertification requirements (eg, interviews for new SNAP participants); to administer Pandemic–Electronic Benefit Transfer (P-EBT), which allows for supplemental benefits for school-aged children qualified for free or reduced-price school lunch and children in childcare centers; and to allow SNAP benefits to be redeemed for groceries online.<sup>9</sup> Some of these changes are set to expire in summer and fall 2021, despite recurring local lockdowns caused by increases in the number of COVID-19 cases.<sup>16</sup> In addition, the existing benefit levels may be insufficient given evidence of their inadequacy relative to the average price of a low-cost meal, increased economic hardship caused by COVID-19–related unemployment and wage loss, and COVID-19–related increases in consumer food prices.<sup>17,18</sup> Policy makers and public health officials require accurate estimates of food insecurity for SNAP

participants in food deserts to determine which policy changes should be implemented in response to the pandemic.

We used longitudinal data from an ongoing, neighborhood-representative cohort of predominantly Black households residing in 2 urban food deserts in Pittsburgh, Pennsylvania.<sup>19,20</sup> We examined changes in food insecurity and access to food, by SNAP participation status, both before and during the early stages of the COVID-19 pandemic. Our ability to focus on food insecurity among Black households living at or near the federal poverty guidelines may help in tailoring interventions to address the disproportionate economic effects of the COVID-19 pandemic on these households.

## Methods

The Pittsburgh Hill/Homewood Research on Neighborhood Change and Health (PHRESH) is a longitudinal study, launched in 2011, that focuses on a geographically representative sample of households randomly selected from a complete listing of residential addresses in 2 low-income, predominantly Black Pittsburgh neighborhoods that are food deserts.<sup>19</sup> The cohort consists of the primary adult food shopper in the household. The PHRESH study is designed to explore how public investments in neighborhoods influence the health of a neighborhood’s population. From March 23 through May 22, 2020, we conducted a telephone survey to examine the effect of COVID-19 on people in our cohort. We used survey data collected during the 2018 wave as the pre-COVID-19 baseline; we conducted this baseline survey in person.<sup>19</sup> Because of COVID-19, we changed the survey mode from in-person to telephone in March 2020. Recruitment and data collection took place via telephone, and we sent postcards to households that we were unable to reach by telephone to increase response rates. In 2020, we reached 605 of the 855 respondents who participated in the 2018 data collection (71% response rate). Of the 250 people who did not participate, we could not reach 163 people, 69 people refused to participate, and 18 people had experienced cognitive decline since 2018 and were not able to participate. Respondents and nonrespondents were similar on most demographic and economic factors, with few significant differences: respondents had a higher income than nonrespondents and were less likely than nonrespondents to report children in the household. The study was approved by the RAND Corporation’s Institutional Review Board.

## SNAP Participation

We collected data on SNAP participation in both the 2018 and 2020 surveys. The 2018 survey asked, “Did any member of your household receive Supplemental Nutrition Assistance Program, or SNAP (formerly called food stamps) in any of the last 12 months?” In the 2020 survey, we asked, “Is any member of your household currently receiving SNAP?” From the answers to both questions, we defined 4 categories.

First, “enrolled in SNAP in 2018 and 2020” included participants enrolled in SNAP at the time of both surveys (2018 and 2020). Second, “enrolled in SNAP in 2020 but not 2018” included participants enrolled in SNAP when surveyed in 2020 but not in 2018. Third, “enrolled in 2018 but not 2020” included participants enrolled in SNAP when surveyed in 2018 but not in 2020. Finally, “not enrolled in 2018 or 2020” included participants not enrolled in SNAP when surveyed in either 2018 or 2020.

### **Food Security and Use of Emergency Food Assistance**

We assessed food security in 2018 and 2020 using the validated Adult Food Security Survey Module Six-Item Short Form.<sup>21</sup> We created a 3-level food security measure based on the survey module scores: we categorized people with scores ranging from 0 to 1.0 as being food secure, people with scores ranging from 2.0 to 4.0 as having a low level of food security, and people with scores ranging from 5.0 to 6.0 as having a very low level of food security. We based scores on the number of affirmative responses to the 6 questions included in the survey module. We also generated a dichotomous measure of food security using standard cutoffs<sup>21</sup>; we categorized people with scores ranging from 0 to 1.0 as food secure and people with scores ranging from 2.0 to 6.0 as food insecure. Newly food-insecure households were households that were food secure in 2018 but food insecure in 2020. To characterize the use of food banks, we asked, “During the past 30 days, have you or has anyone in your household gotten free groceries from a food pantry, food bank, church, or other place that helps with free food?” We assessed difficulties obtaining food during the COVID-19 pandemic by using the following 3 questions: “Since the coronavirus outbreak began, are you able to get your food?”; “Since the coronavirus outbreak, how much harder is it for you to pay for basics like food, housing, medical care, or medicine?”; and “What would you say is your biggest financial concern right now?”

### **Sample Characteristics**

We assessed sample characteristics at baseline in 2018. For the purpose of this study, we defined race via self-identification by using US Census categories.<sup>1</sup> We also assessed age, sex (male/female), the presence of children in the household (yes/no), marital status (married/living with a partner or not married/living with a partner), household income in 2017 (based on 11 income categories), educational attainment (<high school diploma, high school diploma, some college or technical school, college/graduate degree), home ownership (rent, own, or live with family/friends), access to a vehicle (yes/no), and serious underlying health conditions in 2018 (a checklist consisting of obesity, high blood pressure, heart disease, kidney disease, diabetes or high blood sugar, high cholesterol, arthritis, and cancer). We assessed employment status (employed full-time or

part-time or not employed) via self-report in both 2018 and 2020.

### **Statistical Analyses**

First, we calculated means (for dichotomous or categorical measures) and SD (for continuous measures) for individual-level sample characteristics by SNAP participation category. To test for significant differences ( $P < .05$ ) between SNAP participation groups and years, we used the Wald  $F$  test for continuous measures and Pearson  $\chi^2$  test for categorical measures. Similarly, we conducted  $t$  tests and Pearson  $\chi^2$  tests to identify significant differences ( $P < .05$ ) between respondents and nonrespondents from the 2018 full sample. Second, we examined changes in food security between 2018 and 2020 by SNAP participation category. In separate logistic regression models, we examined food insecurity in 2018 and in 2020, adjusting for neighborhood, age, sex, race, household income, educational attainment, marital status, presence of a child in the household, and having a serious underlying health condition as measured in 2018, and employment before the pandemic as measured in 2020. For each SNAP participation category, we described food insecurity rates in 2018 and 2020 and 95% CIs, adjusted for demographic and economic factors. We conducted analyses in 2020 using SAS version 9.4 (SAS Institute, Inc). Because of a few missing values ( $n = 7$ ), the analytic sample size was 598.

## **Results**

The overall sample was predominantly Black (62.0%) and female (83.8%); the mean (SD) age was 62.0 (14.0) years (Table 1). Nearly half of respondents were enrolled in SNAP in both 2018 and 2020 (45.2%). SNAP participation in 2018 or 2020 was positively and significantly associated with not being married/living with a partner ( $P < .001$ ), having children in the household ( $P = .03$ ), renting a home ( $P < .001$ ), lacking access to a vehicle ( $P < .001$ ), and being employed at the start of the pandemic ( $P < .001$ ); participation also increased as age ( $P < .001$ ), household income ( $P < .001$ ), and educational attainment ( $P < .001$ ) decreased.

### **Food Security and Financial Challenges by SNAP Status**

Nearly half (47.8%) of respondents enrolled in SNAP in both 2018 and 2020 were food insecure at the time of the 2020 survey (Table 2). Respondents enrolled in SNAP in both years also had the highest rate (28.9%) of being newly food insecure (ie, food insecure in 2020 but not in 2018) and the highest rate of food bank use (44.4%). Of the 4 SNAP participation categories, respondents enrolled in SNAP in both years were also most likely to report that their biggest financial concern was food (30.5%). Respondents enrolled in SNAP in both years and respondents enrolled in 2018 but not 2020 were also most likely to report not being able to get all

**Table 1.** Characteristics of study participants by SNAP participation status in 2018 and March–May 2020, during early stages of the COVID-19 pandemic, Pittsburgh, Pennsylvania<sup>a</sup>

Characteristic	Overall (N = 598)	Not enrolled in 2018 or 2020 <sup>b</sup> (n = 232)	Enrolled in 2018, not 2020 <sup>c</sup> (n = 55)	Enrolled in 2020, not 2018 <sup>d</sup> (n = 41)	Enrolled in 2018 and 2020 <sup>e</sup> (n = 270)	P value <sup>f</sup>
Share of sample, %	100.0	38.8	9.2	6.8	45.2	—
<b>Demographic<sup>g</sup></b>						
Age, mean (SD), y	62.0 (14.0)	64.5 (13.9)	55.7 (14.9)	63.1 (11.0)	61.0 (13.8)	<.001
Sex						.11
Male	97 (16.2)	46 (19.8)	11 (20.0)	7 (17.1)	33 (12.2)	
Female	501 (83.8)	186 (80.2)	44 (80.0)	34 (82.9)	237 (87.8)	
Race						.63
Black or African American	537 (90.6)	210 (91.3)	52 (94.5)	38 (92.7)	237 (88.8)	
Other <sup>h</sup>	56 (9.4)	20 (8.7)	3 (5.5)	3 (7.3)	30 (11.2)	
Household composition						
Married/living with a partner	99 (16.6)	62 (26.7)	6 (10.9)	2 (4.9)	29 (10.7)	<.001
Children in the household	113 (18.9)	35 (15.1)	18 (32.7)	7 (17.1)	53 (19.6)	.03
<b>Socioeconomic<sup>g</sup></b>						
Total household income in 2017, in thousands, mean (SD), \$	23.2 (20.7)	36.5 (23.6)	19.3 (13.8)	19.9 (15.9)	13.0 (11.9)	<.001
Education						<.001
<High school diploma	63 (10.5)	9 (3.9)	3 (5.5)	8 (19.5)	43 (15.9)	
High school diploma	213 (35.6)	66 (28.5)	18 (32.7)	11 (26.8)	118 (43.7)	
Some college or technical school	234 (39.1)	103 (44.4)	23 (41.8)	19 (46.3)	89 (33.0)	
College/graduate degree	88 (14.7)	54 (23.3)	11 (20.0)	3 (7.3)	20 (7.4)	
Neighborhood						.054
Hill District	377 (63.0)	157 (67.7)	32 (58.2)	23 (56.1)	165 (61.1)	
Homewood	173 (28.9)	66 (28.5)	18 (32.7)	11 (26.8)	78 (28.9)	
Other	48 (8.0)	9 (3.9)	5 (9.1)	7 (17.1)	27 (10.0)	
Renter	398 (66.6)	96 (41.4)	39 (70.9)	30 (73.2)	233 (86.3)	<.001
Access to a vehicle	385 (64.4)	192 (82.8)	27 (49.1)	28 (68.3)	138 (51.1)	<.001
<b>COVID-19–related<sup>i</sup></b>						
Employed at start of COVID-19 pandemic	235 (39.3)	125 (53.9)	31 (56.4)	11 (26.8)	68 (25.2)	<.001
Serious underlying health conditions <sup>j</sup>	477 (79.8)	177 (76.3)	44 (80.0)	36 (87.8)	220 (81.5)	.28

Abbreviations: COVID-19, coronavirus disease 2019; SNAP, Supplemental Nutrition Assistance Program.

<sup>a</sup>Data source: Calculations based on surveys administered as part of the Pittsburgh Hill/Homewood Research on Neighborhood Change and Health study.<sup>22</sup> All values are number (percentage) unless otherwise indicated. Not all participants answered all questions, so numbers in categories may not add to number in column head; percentages are based on numbers of participants who answered questions. Percentages may not total to 100 because of rounding.

<sup>b</sup>Participants not enrolled in SNAP when surveyed in either 2018 or 2020.

<sup>c</sup>Participants enrolled in SNAP when surveyed in 2018 but not in 2020.

<sup>d</sup>Participants enrolled in SNAP when surveyed in 2020 but not in 2018.

<sup>e</sup>Participants enrolled in SNAP at the time of both surveys (2018 and 2020).

<sup>f</sup>Using the Wald *F* test for continuous measures (age and household income) and Pearson  $\chi^2$  test for categorical measures (sex, race, household composition, education, neighborhood, renter status, access to a vehicle, employment status, and underlying health conditions). *P* < .05 considered significant.

<sup>g</sup>Assessed at baseline (2018).

<sup>h</sup>Other races and ethnicities include White, Asian, American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander, multiple races, and other.

<sup>i</sup>Assessed in 2020.

<sup>j</sup>Obesity, high blood pressure, heart disease, kidney disease, diabetes or high blood sugar, high cholesterol, arthritis, or cancer.

of the food they needed (30.0% and 30.9%, respectively). Of respondents enrolled in SNAP in both years, 23.1% reported that it was very much harder to pay for basics since

COVID-19, whereas only 9.9% of those not enrolled in 2018 or 2020 reported the same. We found significant differences among the 4 SNAP participation categories for food

**Table 2.** Food insecurity and access to food by SNAP participation status in 2018 and March–May 2020, during early stages of the COVID-19 pandemic, Pittsburgh, Pennsylvania<sup>a</sup>

Characteristic	Overall (N = 598)	Not enrolled in 2018 or 2020 <sup>b</sup> (n = 232)	Enrolled in 2018, not 2020 <sup>c</sup> (n = 55)	Enrolled in 2020, not 2018 <sup>d</sup> (n = 41)	Enrolled in 2018 and 2020 <sup>e</sup> (n = 270)	P value <sup>f</sup>
Food insecure in 2020 <sup>g</sup>	221 (37.0)	50 (21.6)	23 (41.8)	19 (46.3)	129 (47.8)	<.001
Low food security in 2020	145 (24.2)	36 (15.5)	14 (25.5)	6 (14.6)	89 (33.0)	<.001
Very low food security in 2020	76 (12.7)	14 (6.0)	9 (16.4)	13 (31.7)	40 (14.8)	<.001
Newly food insecure in 2020	137 (22.9)	35 (15.1)	14 (25.5)	10 (24.4)	78 (28.9)	.003
Food bank use in past 30 days	215 (36.0)	57 (24.6)	21 (38.2)	17 (41.5)	120 (44.4)	<.001
Ability to get food since COVID-19						.01
I can get everything I need fairly easily	282 (47.3)	131 (57.0)	24 (43.6)	20 (48.8)	107 (39.6)	
I can get everything I need but with great difficulty	159 (26.7)	52 (22.6)	14 (25.5)	11 (26.8)	82 (30.4)	
I cannot get everything I need	155 (26.0)	47 (20.4)	17 (30.9)	10 (24.4)	81 (30.0)	
Biggest financial concern now						.001
Food	135 (22.7)	32 (13.9)	13 (23.6)	8 (19.5)	82 (30.5)	
Rent or mortgage	94 (15.8)	34 (14.8)	11 (20.0)	4 (9.8)	45 (16.7)	
Medical bills or medicine	33 (5.6)	16 (7.0)	4 (7.3)	3 (7.3)	10 (3.7)	
Utilities	98 (16.5)	35 (15.2)	6 (10.9)	9 (22.0)	48 (17.8)	
No financial concerns	235 (39.5)	113 (49.1)	21 (38.2)	17 (41.5)	84 (31.2)	
How hard is it to pay for basics since COVID-19?						<.001
Not harder at all	262 (44.0)	124 (53.4)	18 (32.7)	17 (41.5)	103 (38.4)	
Somewhat harder	219 (36.7)	85 (36.6)	16 (29.1)	15 (36.6)	103 (38.4)	
Very much harder	115 (19.3)	23 (9.9)	21 (38.2)	9 (22.0)	62 (23.1)	

Abbreviations: COVID-19, coronavirus disease 2019; SNAP, Supplemental Nutrition Assistance Program.

<sup>a</sup>Data source: Calculations based on surveys administered as part of the Pittsburgh Hill/Homewood Research on Neighborhood Change and Health study.<sup>22</sup> All values are number (percentage) unless otherwise indicated. Not all participants answered all questions, so numbers in categories may not add to number in column head; percentages are based on numbers of participants who answered questions. Percentages may not total to 100 because of rounding.

<sup>b</sup>Participants not enrolled in SNAP when surveyed in either 2018 or 2020.

<sup>c</sup>Participants enrolled in SNAP when surveyed in 2018 but not in 2020.

<sup>d</sup>Participants enrolled in SNAP when surveyed in 2020 but not in 2018.

<sup>e</sup>Participants enrolled in SNAP at the time of both surveys (2018 and 2020).

<sup>f</sup>Pearson  $\chi^2$  test used to determine *P* values for all variables; *P* < .05 considered significant.

<sup>g</sup>Food insecure in 2020 encompassed households that had low or very low food security in 2020. Dichotomous measure of food security is from the US Department of Agriculture's Adult Food Security Survey Module Six-Item Short Form, which uses a standard cutoff categorizing those with Food Security Survey Module scores of 0-1 as food secure, those with scores of 2-6 as not food secure, those with scores of 2-4 as low food security, and those with scores of 5-6 as very low food security.<sup>11</sup> Scores based on the number of affirmative responses to the 6 questions included in the survey module. Food insecurity, financial concerns, ability to pay for basics, and access to food were assessed in 2020.

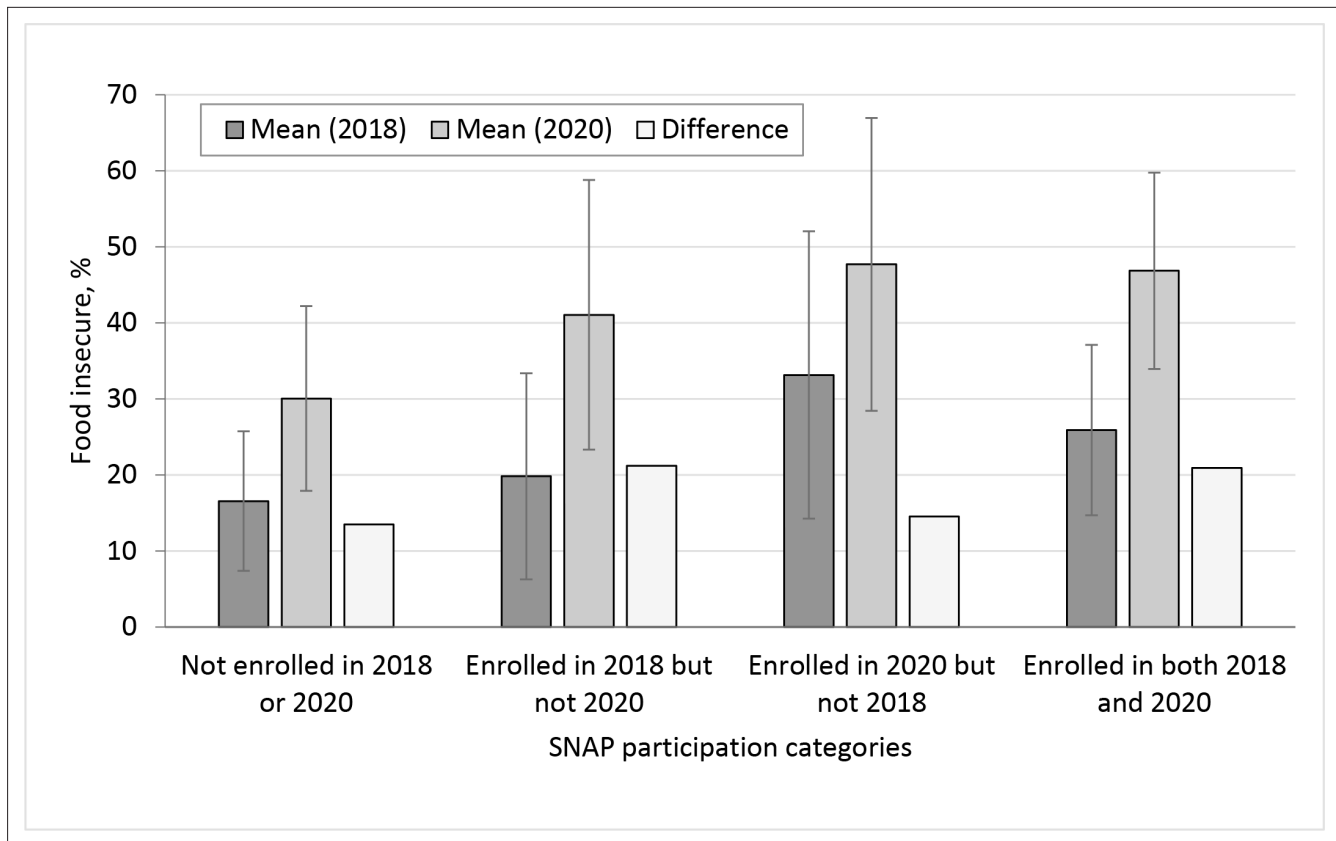
insecurity (*P* < .001), ability to get food (*P* = .01), food bank use (*P* < .001), biggest financial concerns (*P* < .001), and ability to pay for basics (*P* < .001).

### Changes in Food Security by SNAP Participation

Regardless of SNAP participation category, food insecurity increased from 2018 to 2020 (Figure). We found increases in food insecurity among respondents not enrolled in SNAP in 2018 or 2020 (from 16.6% in 2018 to 30.1% in 2020; *P* = .004), respondents enrolled in SNAP in 2018 but not 2020 (from 19.8% to 41.1%; *P* = .02), respondents enrolled in SNAP in both 2018 and 2020 (from 25.9% to 46.9%; *P* < .001), and respondents enrolled in SNAP in 2020 but not 2018 (from 33.2% to 47.7%; *P* = .10).

### Discussion

To our knowledge, ours is the first longitudinal study to examine the effect of COVID-19 on food insecurity among a predominantly Black cohort, by SNAP participation. Our findings demonstrate that low-income Black households enrolled in SNAP in racially isolated food deserts are uniquely vulnerable to food insecurity during the COVID-19 pandemic and are encountering substantial barriers to food access, particularly when compared with similar households in our sample not participating in SNAP and findings from a nationally representative survey.<sup>1</sup> We found that study respondents enrolled in SNAP in both 2018 and 2020 had substantial difficulty in the early weeks of the pandemic,



**Figure.** Differences in food insecurity by participation status in the Supplemental Nutrition Assistance Program (SNAP) from 2018 to 2020, during early stages of the COVID-19 pandemic, Pittsburgh, Pennsylvania. “Not enrolled in 2018 or 2020” includes participants not enrolled in SNAP when surveyed in either 2018 or 2020. “Enrolled in 2020 but not 2018” includes participants enrolled in SNAP when surveyed in 2020 but not in 2018. “Enrolled in 2018 but not 2020” includes participants enrolled in SNAP when surveyed in 2018 but not in 2020. “Enrolled in both 2018 and 2020” includes participants who were enrolled in SNAP at the time of both surveys (2018 and 2020). Error bars indicate 95% CIs. Data source: calculations based on surveys administered as part of the Pittsburgh Hill/Homewood Research on Neighborhood Change and Health study.<sup>22</sup>

with 46.9% being food insecure, compared with 30.1% of study respondents not enrolled in 2018 or 2020. A large number of households that were not food secure in 2018 became food insecure in 2020. The difference in the magnitude of the change in food security during the pandemic between respondents enrolled in SNAP and respondents not enrolled in SNAP may also be related to broader unobserved differences between these groups in terms of vulnerability to economic or other external shocks that were not controlled for in our analysis.

Previous studies suggest that food access barriers are, in part, a consequence of entrenched income inequality and neighborhood-level disadvantage, which stems from structural and institutional racism in economic investment and development policies.<sup>23-25</sup> Financial difficulties reported in our study may be attributable to unemployment and wage loss associated with business closures caused by the COVID-19 pandemic, which have hit hardest among Black and Latino workers, women, and people with less than a college education.<sup>26,27</sup> Racial/ethnic disparities in wage loss may be related to the

disparate effect of the pandemic on the types of industries in which low-income Black and Latino people are employed (ie, industries most affected by the pandemic, including food service and retail), disparities in economic assistance for businesses during the pandemic (eg, Paycheck Protection Program loans), and long-standing racial/ethnic disparities in economic opportunity, wages, and household savings.<sup>26</sup> For households that responded to our survey in April or May 2020, food insecurity may have been related to diminished purchasing power after increases in consumer food prices, which have not been matched by a cost-of-living adjustment in SNAP or employment income.<sup>26</sup>

Food access challenges reported in our study may be related to low levels of vehicle ownership in our sample, reduced access to public transit caused by social-distancing restrictions in Pittsburgh, and reduced store hours, staffing, and stocking during the first few weeks of the pandemic, particularly in small food retail stores located in neighborhoods with limited access to healthy and affordable food.<sup>28</sup> These disparities may also be attributable, in part, to differences in

food access that stem from structural racism. For example, limited access to healthy and affordable food in some predominantly Black neighborhoods may be related to development policies rooted in residential and retail redlining, as well as discriminatory perceptions among retailers and developers related to cultural bias, profitability, or perceived crime in predominantly Black neighborhoods.<sup>24,25</sup>

### Limitations

This study had several limitations. First, our results may not generalize to all populations. Rather, our findings have particular relevance for Black people experiencing poverty or Black people living in areas with limited access to healthy and affordable food. Second, food insecurity may have been particularly heightened in our sample given that households tend to self-select into SNAP when they are most food insecure.<sup>29</sup> Although our comparison of households enrolled in SNAP and households not enrolled in SNAP adjusted for differences in demographic and economic factors, we did not account for other differences that may exist. Third, our measure of SNAP participation was self-reported. Estimates from the National Household Food Acquisition and Purchase Survey and administrative SNAP records indicate that underreporting is a concern, and may be as high as 18%.<sup>30</sup> Fourth, the USDA's Food Security Module may underestimate the adverse health effects of marginal food security, which is categorized as food secure.<sup>31</sup> Fifth, our study was unable to identify reasons for change in SNAP participation status from 2018 to 2020. Finally, we fielded our survey from March 23 through May 22, 2020, a period of rapid fluctuations in food access, SNAP administration, and economic assistance policy. Several administrative changes were made to SNAP in Pennsylvania during the data collection period (eg, the issuance of emergency allotments in late April). These changes may have influenced our findings; for example, the issuance of emergency allotments may have improved the food security of households enrolled in SNAP. However, it is unlikely that the complete effects of these policy changes would have been captured during the study period. Approximately 60% of our sample had already responded by mid-April, and the news media reported implementation challenges and delays in SNAP benefit receipt in Pennsylvania.<sup>32</sup> National data suggest similar delays were particularly prevalent among Black and Latino communities, which experienced unequal access to pandemic-related economic assistance.<sup>33,34</sup>

### Conclusion

Our findings suggest that more must be done in the near and long term to strengthen and effectively leverage SNAP, given that nearly half of SNAP enrollees in our study were food insecure. To address the near-term financial barriers among SNAP recipients, Congress recently increased the maximum

SNAP benefit by 15% through June 2021, expanded access to SNAP for college students, and allocated additional funding to SNAP agencies and food banks.<sup>35</sup> Similarly, the USDA recently increased P-EBT benefits for school-aged children and SNAP emergency allotments for the lowest-income households.<sup>36</sup> These changes, along with existing waivers, should be extended, given the prolonged economic effects of the COVID-19 pandemic, and potentially tied to public health or economic indicators. States should also consider improving P-EBT, which has been extended through September 2021. For example, state child nutrition and SNAP agencies should consider issuing benefits directly to families and streamlining applications and benefit activation.<sup>18</sup> Although our survey did not ask about P-EBT receipt, which was approved in Pennsylvania after our survey had been launched, future research should seek to characterize its benefit.<sup>37</sup>

Policy makers should also consider long-term fixes to address the adequacy of SNAP benefits, including adjusting the assumptions underlying the Thrifty Food Plan.<sup>38</sup> To address SNAP access barriers, policy makers should consider granting further flexibility to allow SNAP benefits to be used to purchase prepared foods and online groceries from a broader variety of grocers, with allowances for delivery fees.<sup>39</sup> Policy makers should also reassess burdensome changes to rules on work requirements, public charge policies (ie, immigration rules that make it more difficult for people to obtain green cards or temporary visas if they have received public benefits), broad-based categorical eligibility, and utility allowances that are likely to exacerbate inequities in access to SNAP. Rapid investments in SNAP may alleviate the disproportionate burden of COVID-19 among people experiencing poverty.

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