

## Supplemental Online Content

Wu Y, Cheng J, Thorndike AN. Changes in food insecurity among US adults with low income during the COVID-19 pandemic. *JAMA Netw Open*. 2025;8(2):e2462277. doi:10.1001/jamanetworkopen.2024.62277

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This supplemental material has been provided by the authors to give readers additional information about their work.

**eTable 1.** SNAP use in the past 12 months among U.S. adults with low income by racial and ethnic group\*

	SNAP past 12 mo, % (95% CI)		<i>P</i> value
	Before COVID-19 period	During COVID-19 period	
<b>Asian</b>	19.6 (15.2-24.7)	28.8 (24.7-33.3)	0.004
<b>Black</b>	43.2 (40.1-46.4)	49.6 (47.1-52.2)	0.001
<b>Hispanic</b>	30.7 (28.3-33.1)	35.7 (33.2-38.2)	0.001
<b>White</b>	27.8 (26.2-29.5)	31.1 (29.6-32.7)	0.001

\* SNAP- Supplemental Nutrition Assistance Program; Pre-COVID: January 2019- March 2020; COVID: April 2020- December 2022

**eTable 2.** Characteristics of U.S. adult SNAP users with low income before and during the COVID-19 pandemic\*

	Before COVID-19 period		During COVID-19 period		<i>P</i> Value
	No.	Weighted % (95% CI)	No.	Weighted % (95% CI)	
Sample	3451		6182		
Population	7 017 789		16 277 031		
Age group, years					
18-44	1509	53.6 (51.4-55.8)	2688	54.3 (52.6-56.1)	0.83
45-64	1173	30.4 (28.4-32.3)	2022	29.7 (28.2-31.3)	
≥65	767	16.0 (14.7-17.5)	1466	16.0 (14.9-17.1)	
Female	2295	62.8 (60.6-64.9)	4088	62.0 (60.3-63.7)	0.58
Race/Ethnicity					
Asian	85	3.3 (2.4-4.3)	242	4.2 (3.5-5.1)	0.16
Black	804	23.6 (23.0-29.2)	1457	24.3 (22.0-26.8)	
Hispanic	754	26.0 (23.0-29.2)	1440	27.4 (24.3-30.7)	
White	1630	41.7 (38.8-44.8)	2772	39.7 (36.8-42.5)	
Other	178	5.4 (3.5-7.8)	271	4.4 (2.9-6.3)	
BMI Category, kg/m2					
<18.5	70	2.1 (1.5-2.8)	92	1.6 (1.2-2.0)	0.61
18.5 to <25	844	25.9 (23.9-27.9)	1513	25.6 (24.0-27.1)	
25 to <30	964	29.3 (27.2-31.4)	1809	29.5 (28.0-31.0)	
≥30	1485	42.8 (40.5-45.1)	2618	43.4 (41.6-45.1)	
Food Insecurity Past 30d	1244	35.2 (33.0-37.4)	1563	26.1 (24.5-27.8)	<0.001
WIC Past 12mo	478	26.3 (23.7-29.1)	795	25.2 (23.2-27.2)	0.47
Worked Past Week	1140	38.1 (36.0-40.2)	2054	39.0 (37.3-40.7)	0.49
Health Insurance	2940	81.4 (79.2-83.4)	5442	83.6 (81.7-85.4)	0.05
Education Level					
Less Than High School	973	34.9 (32.5-37.2)	1611	29.7 (27.8-31.6)	<0.001
High School or Equivalent	1199	33.7 (31.7-35.8)	2191	38.4 (36.7-40.1)	
More Than High School	1255	31.4 (29.3-33.6)	2323	32.0 (30.3-33.6)	

\* Pre-COVID: January 2019- March 2020; COVID: April 2020- December 2022; SNAP- Supplemental Nutrition Assistance Program

**eTable 3.** Wald tests of main effects and interactions between Race/Ethnicity and Time on food insecurity prevalence in U.S. adults with low income before and during the COVID-19 pandemic\*

	<b>F Value</b>	<b>P Value</b>
<b>Race/Ethnicity</b>	13.40	<0.001
<b>Time</b>	12.04	<0.001
<b>Race/Ethnicity*Time</b>	1.29	0.28

\* Pre-COVID: January 2019- March 2020; COVID: April 2020- December 2022

**eTable 4.** Crude prevalences and crude prevalence ratios of food insecurity by racial and ethnic group in U.S. adults reporting <125% of federal poverty level before and during the COVID-19 pandemic\*

	Food Insecurity Before COVID-19 Period % (95% CI)	Food Insecurity During COVID-19 Period % (95% CI)	PR <sup>†</sup> (95% CI)	P Value
<b>Asian</b>	14.3 (9.8-18.7)	16.0 (11.5-20.4)	1.12 (0.75-1.67)	0.57
<b>Black</b>	30.6 (26.9-34.3)	28.2 (25.6-30.7)	0.92 (0.79-1.07)	0.29
<b>Hispanic</b>	26.6 (23.3-29.8)	23.9 (21.7-26.2)	0.90 (0.78-1.04)	0.15
<b>White</b>	25.7 (23.6-27.8)	21.7 (19.8-23.6)	0.84 (0.75-0.94)	0.003

\* Pre-COVID: January 2019- March 2020; COVID: April 2020- December 2022

† PR- Prevalence Ratio

**eTable 5.** Wald tests of main effects and interactions between Race/Ethnicity and Time on food insecurity prevalence in U.S. adults reporting <125% of federal poverty level before and during the COVID-19 pandemic\*

	<b>F Value</b>	<b>P Value</b>
<b>Race/Ethnicity</b>	6.80	<0.001
<b>Time</b>	8.98	0.003
<b>Race/Ethnicity*Time</b>	0.84	0.47

\* Pre-COVID: January 2019- March 2020; COVID: April 2020- December 2022

**eTable 6.** Wald tests of main effects and interactions between SNAP use, Race/Ethnicity, and Time on food insecurity prevalence in U.S. adults with low income before and during the COVID-19 pandemic\*

	<b>F Value</b>	<b>P Value</b>
<b>SNAP</b>	320.11	<0.001
<b>Race/Ethnicity</b>	15.80	<0.001
<b>Time</b>	1.75	0.19
<b>SNAP*Time</b>	6.85	0.009
<b>SNAP*Race/Ethnicity</b>	10.42	<0.001
<b>Race/Ethnicity*Time</b>	2.74	0.04
<b>Race/Ethnicity*SNAP*Time</b>	3.43	0.02

\* SNAP- Supplemental Nutrition Assistance Program; Pre-COVID: January 2019- March 2020; COVID: April 2020- December 2022

**eTable 7.** Crude prevalences and crude prevalence ratios of food insecurity by racial and ethnic group and SNAP use in U.S. adults with low income before and during the COVID-19 pandemic\*

		Food Insecurity Before COVID-19 Period % (95% CI)	Food Insecurity During COVID-19 Period % (95% CI)	PR <sup>†</sup> (95% CI)	P Value
Asian	SNAP	31.0 (19.1-43.0)	16.3 (10.6-22.0)	0.53 (0.31-0.89)	0.02
	No SNAP	6.2 (3.4-8.9)	10.7 (7.4-14.0)	1.74 (1.02-2.98)	0.04
Black	SNAP	33.5 (28.9-38.1)	28.2 (25.0-31.5)	0.84 (0.71-1.01)	0.06
	No SNAP	20.8 (17.9-23.8)	20.8 (18.2-23.4)	1.00 (0.83-1.21)	0.99
Hispanic	SNAP	32.6 (28.1-37.1)	22.8 (20.2-25.4)	0.70 (0.59-0.83)	<0.001
	No SNAP	14.7 (12.3-17.0)	17.1 (15.1-19.2)	1.17 (0.97-1.41)	0.11
White	SNAP	37.0 (34.0-40.0)	27.6 (25.2-30.0)	0.75 (0.67-0.83)	<0.001
	No SNAP	12.7 (11.6-13.9)	11.7 (10.7-12.8)	0.92 (0.81-1.04)	0.19

\* SNAP- Supplemental Nutrition Assistance Program; Pre-COVID: January 2019- March 2020; COVID: April 2020- December 2022

† PR- Prevalence Ratio



**eTable 8.** Crude prevalences and crude prevalence ratios of food insecurity by racial and ethnic group and SNAP use in U.S. adults reporting <125% of federal poverty level before and during the COVID-19 pandemic\*

		<b>Food Insecurity Before COVID-19 Period % (95% CI)</b>	<b>Food Insecurity During COVID-19 Period % (95% CI)</b>	<b>PR<sup>†</sup> (95% CI)</b>	<b>P Value</b>
<b>Asian</b>	<b>SNAP</b>	38.7 (25.8-51.6)	18.7 (11.7-25.7)	0.48 (0.30-0.79)	0.003
	<b>No SNAP</b>	6.7 (3.3-20.0)	14.2 (7.9-20.4)	2.12 (1.09-4.11)	0.03
<b>Black</b>	<b>SNAP</b>	35.6 (30.4-40.8)	30.0 (26.3-33.7)	0.84 (0.69-1.03)	0.09
	<b>No SNAP</b>	24.9 (20.1-29.7)	25.3 (21.3-29.3)	1.02 (0.79-1.31)	0.91
<b>Hispanic</b>	<b>SNAP</b>	35.6 (30.4-40.8)	24.5 (21.3-27.8)	0.69 (0.57-0.83)	<0.001
	<b>No SNAP</b>	19.6 (15.9-23.2)	23.3 (20.0-26.7)	1.19 (0.95-1.49)	0.12
<b>White</b>	<b>SNAP</b>	39.9 (36.5-43.3)	30.3 (27.2-33.3)	0.76 (0.67-0.86)	<0.001
	<b>No SNAP</b>	15.7 (13.5-17.8)	14.2 (12.3-16.1)	0.91 (0.74-1.10)	0.33

\* SNAP- Supplemental Nutrition Assistance Program; Pre-COVID: January 2019- March 2020; COVID: April 2020- December 2022

† PR- Prevalence Ratio

**eTable 9.** Wald tests of main effects and interactions between SNAP use, Race/Ethnicity, and Time on food insecurity prevalence in U.S. adults reporting <125% of federal poverty level before and during the COVID-19 pandemic\*

	<b>F Value</b>	<b>P Value</b>
<b>SNAP</b>	124.13	<0.001
<b>Race/Ethnicity</b>	10.27	<0.001
<b>Time</b>	0.95	0.33
<b>SNAP*Time</b>	2.33	0.13
<b>SNAP*Race/Ethnicity</b>	9.97	<0.001
<b>Race/Ethnicity*Time</b>	2.62	0.05
<b>Race/Ethnicity*SNAP*Time</b>	3.98	<0.001

\* SNAP- Supplemental Nutrition Assistance Program; Pre-COVID: January 2019- March 2020; COVID: April 2020- December 2022