

Unemployment Insurance, Health-Related Social Needs, Health Care Access, and Mental Health During the COVID-19 Pandemic

More than 30 million jobs have been lost during the coronavirus disease 2019 (COVID-19) pandemic.¹ Unemployment insurance (UI) was temporarily expanded by the Coronavirus Aid, Relief, and Economic Security (CARES) Act,² but further reform is under debate. Key CARES Act provisions were adding \$600 weekly federal payments to state payments (Federal Pandemic Unemployment Compensation), longer benefit duration (Pandemic Emergency Unemployment Compensation), and broadened eligibility for minimum-wage, self-employed, contract, and gig workers (Pandemic Unemployment Assistance).²

Unemployment insurance may have short-term health effects through at least 3 pathways,³ as benefit income can meet health-related social needs (eg, food and housing), cover health care access expenses (eg, insurance premiums, co-pays, transportation), and reduce stress, thereby improving mental health. We hypothesized that among those with pandemic-related income disruption, living in a household receiving UI benefits would be associated with lower health-related social needs, better health care access, and better mental health.

Methods | This cross-sectional study used data from the repeated cross-sectional Household Pulse Survey (<https://www.census.gov/householdpulse>) collected from June 11 to July 21, 2020 (response rate: 3.0%). We included working-age adults (born between 1955 and 2002, inclusive) who reported current household income disruption from pandemic-related job loss. The University of North Carolina Institutional Review Board exempted the study from review because it did not consider this human subjects research (Study No. 20-2657).

Receiving UI was defined as using UI benefits to meet spending needs in the last 7 days. Study outcomes were food insufficiency,⁴ missing last month's housing payment, lack of confidence in affording next month's food or housing, being uninsured, delaying health care, delaying non-COVID-19-related health care, depressive symptoms, and anxiety symptoms.^{5,6}

We fit survey-weighted log-Poisson regression models to estimate adjusted relative risks, using generalized estimating equations to account for repeated measures within individuals and robust variance estimation (analysis code: <http://saberowitz.web.unc.edu/statistical-code/household-pulse-unemployment-insurance-code/>). The unit of analysis was the person-week (individuals could participate up to 3 times). Model covariates were age, gender, self-reported race/ethnicity, education level, 2019 annual household income, marital status, household size, state, and survey date. We multiply imputed missing data (see eMethods in the [Supple-](#)

[ment](#)) and used the false discovery rate for type I error control. Analyses were conducted in SAS, version 9.4 (SAS Institute) and R, version 3.5.3 (R Foundation for Statistical Computing). Unadjusted analyses used *t* tests for continuous variables and χ^2 tests for categorical variables, with 2-tailed *P* values. Given multiple outcomes in this study, we used the false discovery rate approach to control for type I error. Therefore, we present regression results with both a nominal *P* value and a *Q* value, which can be interpreted as indicating the proportion of results with that *Q* value or lower that would be expected to be a false positive accounting for all the analyses conducted. Thus, a *Q* value less than .05 indicates that, accounting for multiple analyses, a given result is expected to be a false positive less than 5% of the time. We interpreted a *Q* value less than .05 to indicate statistical significance.

Results | A total of 68 911 included individuals, representing 34 million people in the US, provided 79 032 survey responses. The mean (SD) age was 39.5 (13.4) years, and 50.7% were women. There were 28 738 individuals, representing 12 million Americans (weighted percentage of sample: 36%), who reported household use of UI benefits in the past week (**Table 1**).

In adjusted analyses, being in a household that received, vs did not receive, UI benefits was associated with lower risk for unmet health-related social needs, delaying health care, and depressive and anxiety symptoms (**Table 2**). Being uninsured was not significantly different: relative risk, 0.97 (95% CI, 0.92-1.03).

Discussion | Being in a household that received UI was associated with fewer health-related social needs, less health care delay, and better mental health. However, many who reported pandemic-related job loss did not receive UI—particularly Hispanic individuals and those with less education.

Pandemic UI reforms, specifically more generous income replacement and broader eligibility, should guide future UI programs. Future research should examine whether UI's association with health outcomes varies by reason for job loss, race/ethnicity, prepandemic income, and number of children, and how UI benefits may intersect with other programs, such as stimulus payments and Medicaid expansion.

Important limitations include possible selection bias (owing to low survey response rate), though we used weighting for respondent representativeness and multiple imputation for missing data. Observed associations should not be considered causal given the repeated cross-section design and because UI recipients may be better off than nonrecipients in ways not accounted for (inflating the estimated benefit of UI) or those not receiving UI may have been excluded from the study after accepting underemployment (reducing estimated benefit). Also, both those who did and did not receive UI could receive other pandemic-related assistance—this may bias results to the null.

Table 1. Characteristics of Included Participants^a

Characteristic	No. (weighted %)			P value ^b
	Overall (n = 68 911; weighted n = 34 382 646)	Did not receive UI benefits (n = 40 173; weighted n = 21 967 614)	Received UI benefits (n = 28 738; weighted n = 12 415 032)	
Age, mean (SD), y	39.5 (13.4)	39.2 (13.6)	40.0 (13.0)	.003
Women	43 421 (50.7)	25 016 (49.6)	18 405 (52.7)	.003
Race/ethnicity				
NH White	41 555 (44.7)	23 425 (42.5)	18 130 (48.6)	<.001
NH Black	8859 (17.1)	5126 (16.8)	3733 (17.6)	
Hispanic	11 413 (27.5)	7489 (30.4)	3924 (22.3)	
NH Asian	3460 (5.8)	1960 (5.1)	1500 (7.1)	
NH other	3624 (4.9)	2173 (5.2)	1451 (4.4)	
Education				
<HS diploma	3369 (14.9)	2444 (18.2)	925 (9.0)	<.001
HS diploma	12 310 (35.6)	7379 (35.4)	4931 (36.1)	
>HS diploma	53 232 (49.5)	30 350 (46.4)	22 882 (54.9)	
Prepandemic annual household income, \$				
<25 000	14 142 (30.2)	9285 (34.5)	4857 (23.0)	<.001
25 000-34 999	8690 (16.1)	4930 (16.4)	3760 (15.8)	
35 000-49 999	8753 (14.9)	4733 (14.0)	4020 (16.4)	
50 000-74 999	10 477 (16.4)	5506 (14.7)	4971 (19.2)	
75 000-99 999	6598 (9.4)	3434 (8.3)	3164 (11.3)	
100 000-149 999	6176 (8.0)	3217 (7.3)	2959 (9.3)	
150 000-199 999	2286 (2.8)	1238 (2.6)	1048 (3.2)	
≥200 000	1963 (2.1)	1233 (2.3)	730 (1.9)	
Married	30 703 (41.6)	17 993 (41.0)	12 710 (42.6)	.14
Household size				
1	8927 (5.0)	4825 (4.5)	4102 (5.9)	<.001
2	19 268 (19.2)	10 649 (17.9)	8619 (21.5)	
3	14 410 (20.6)	8440 (20.0)	5970 (21.7)	
4	12 957 (21.9)	7809 (22.4)	5148 (21.0)	
5	7147 (15)	4438 (15.6)	2709 (14.0)	
6	3307 (8.5)	2090 (8.9)	1217 (8.0)	
7	1363 (3.8)	894 (4.2)	469 (3.0)	
8	625 (1.9)	421 (2.1)	204 (1.5)	
9	250 (0.9)	169 (1.1)	81 (0.7)	
10	657 (3.1)	438 (3.4)	219 (2.8)	
Survey period				
June 11-16, 2020	10 130 (24.1)	5855 (23.8)	4275 (24.8)	.37
June 18-23, 2020	13 966 (16.3)	8151 (16.4)	5815 (16.1)	
June 25-30, 2020	11 969 (14.8)	7077 (15.1)	4892 (14.1)	
July 2-7, 2020	10 613 (14.6)	6158 (14.6)	4455 (14.6)	
July 9-14, 2020	11 452 (15.3)	6673 (15.5)	4779 (14.8)	
July 16-21, 2020	10 781 (15.0)	6259 (14.6)	4522 (15.6)	
Food insufficiency	13 533 (25.1)	9517 (28.9)	4016 (18.5)	<.001
Missed housing payment	10 731 (26.7)	7028 (31.3)	3703 (19.3)	<.001
Lacking confidence in affording next month				
Food	36 158 (61.2)	22 257 (64.2)	13 901 (56.0)	<.001
Housing	19 773 (46.2)	12 458 (50.9)	7315 (38.8)	<.001
Uninsured	19 463 (34.7)	11 926 (36.7)	7537 (31.1)	<.001
Delay health care	31 167 (44.9)	18 532 (44.9)	12 635 (44.8)	.89
Delay non-COVID-19 health care	26 694 (39.0)	16 143 (39.4)	10 551 (38.4)	.36
PHQ2 depression score ≥3 ^c	25 482 (42.3)	15 487 (43.9)	9995 (39.5)	<.001
GAD2 anxiety score ≥3 ^c	32 724 (50.6)	19 364 (51.7)	13 360 (48.8)	.01

Abbreviations: COVID-19, coronavirus disease 2019; GAD2, Generalized Anxiety Disorder 2-item; HS, high school; NH, non-Hispanic; PHQ2, Patient Health Questionnaire-2; UI, unemployment insurance.

^a Included participants are ones who (1) reported being in a household that experienced a loss of employment income on or after March 13, 2020, and (2) had no regular earned income source in the 7 days preceding the survey (defined as the kind of income a respondent had prepandemic), to meet their spending needs. Because participants could complete the survey for up to 3 weeks, this table presents results according to the first recorded survey response.

^b P values from weighted t tests (age) or χ^2 tests (all other variables).

^c For the PHQ2 and GAD2, scores range from 0 to 6 (more depressive or anxiety symptoms); in keeping with scoring recommendations, we used a cut point of ≥3 on both to indicate potentially clinically significant symptoms.

Table 2. Adjusted Relative Risk Between Receipt of Unemployment Insurance Benefits and Health-Related Social Needs, Health Care Access, and Mental Health Outcomes^a

Outcome	Relative risk (95% CI) ^{b,c}	P value ^c	Q value
Food insufficiency	0.83 (0.77-0.88)	<.001	<.001
Missed housing payment	0.63 (0.58-0.69)	<.001	<.001
Lacking confidence in affording next month			
Food	0.94 (0.92-0.97)	<.001	<.001
Housing	0.84 (0.80-0.88)	<.001	<.001
Uninsured	0.97 (0.92-1.03)	.36	.36
Delayed health care	0.93 (0.89-0.98)	.003	.003
Delayed non-COVID-19 health care	0.91 (0.87-0.96)	<.001	<.001
PHQ2 depression score $\geq 3^d$	0.90 (0.85-0.95)	<.001	<.001
GAD2 anxiety score $\geq 3^d$	0.93 (0.89-0.97)	.001	.001

Abbreviations: COVID-19, coronavirus disease 2019; GAD2, Generalized Anxiety Disorder 2-item; PHQ2, Patient Health Questionnaire-2.

^a Models were adjusted for age, gender, race/ethnicity, education level, income, household size, marital status, state, and week of survey. The models for food insufficiency and lacking confidence in affording food next month were additionally adjusted for prepandemic food insufficiency.

^b Relative risk compares risk for outcome in those who received unemployment insurance benefits to those who did not receive unemployment insurance benefit. A relative risk <1 indicates lower risk for a given outcome (eg, less

likely to experience food insufficiency).

^c Point estimates, 95% CIs, and P values are from log-Poisson regression models fit using generalized estimating equations (to account for repeated survey responses within individuals), person weights, and robust variance estimation. Models were fit in 10 Markov Chain Monte Carlo multiple imputation data sets and combined for a summary estimate.

^d For the PHQ2 and GAD2, scores range from 0 to 6 (more depressive or anxiety symptoms); in keeping with scoring recommendations, we used a cut point of ≥ 3 on both to indicate potentially clinically significant symptoms.

Unemployment insurance benefits may help mitigate economic disruption wrought by the pandemic. As UI reform develops, policy makers should recognize the important health benefits that UI may offer working-age people in the US.

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Additional Information: The data are publicly available. Analysis code for replication is provided via the weblink in the main text.

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