Effects of Expanding Unemployment Insurance on Well-Being: Responses to COVID-19 *

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Abstract

The Coronavirus Aid, Relief, and Economic Security (CARES) Act was signed into law on March 27, 2020 to address the economic hardships of the global COVID-19 pandemic in the United States. The law provided substantial support directly related to unemployment insurance benefits in addition to one-time federal stimulus payments. The four new unemployment insurance (UI) programs—Pandemic Emergency Unemployment Compensation (PEUC)—federally funded payments after 6-month spells of UI, Federal Pandemic Unemployment Compensation (FPUC)—the top-up—which provided an additional $300-$600 in UI payments, Pandemic Unemployment Assistance (PUA)—the new program for self-employed/gig workers and new entrants, and Lost Wages Assistance (LWA)—another smaller top-up program—were administered by the states. We compiled unique data on when states started payments, extended payments, and stopped accepting claims for payments, for each program through the end of 2021. We leverage this variation in the timing of the disbursal of UI payments through these programs across states over time to identify the effects of receiving unemployment insurance on food security and mental health. We find that the initial payments for these UI programs had positive effects for some subgroups, particularly for Hispanic individuals and for women, even controlling for the severity of COVID-19.

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1 Introduction

The COVID-19 crisis lead to great suffering, which was quickly met with comprehensive fiscal responses. The March 2020 onset of the COVID-19 pandemic in the U.S. prompted stay-at-home orders, school closures, and widespread disruptions to economic activity. The seasonally-adjusted unemployment rate rose from 3.5 percent in February of 2022 to 14.7 percent in April 2022. The fiscal response from the United States (US) Government was enormous, with the first actions taking place in late March 2020. There were three rounds of stimulus payments—each between $1,200 and $1,400—to most adults (with some variation for non-citizens), plus a smaller additional amount for dependents. The US Department of Agriculture expanded a number of food assistance programs and implemented waivers to the usual eligibility rules. The Medicaid program suspended normal operations and stopped dis-enrolling people at the end of the certification periods. There was also an unprecedented expansion of Unemployment Insurance (UI), which we focus on here. Unemployment Insurance was augmented by several entirely new programs as well as the type of federally-funded extensions to UI typical in recessions. The new programs included: 1) Pandemic Emergency Unemployment Compensation (PEUC), which paid for additional weeks after usual state UI payments were exhausted before the usual jointly funded state/federal program kicked in and is similar to other extensions paid during previous recessions; 2) Federal Pandemic Unemployment Compensation (FPUC), which topped up usual UI benefits with additional payments of $300–$600 per person; 3) Pandemic Unemployment Assistance (PUA), which provided benefits to the self-employed and those with insufficient work/earnings history who would all otherwise be ineligible for UI; and 4) the Lost Wages Assistance Program, which provided a smaller top-up of shorter duration. Through October 1, 2022; $674 billion was spent on the combination of these new programs and a small amount of support for certain state expenditures (e.g., federal funding which permitted people to apply for UI immediately and be paid without the usual 1 week waiting period required in normal times).

A number of papers have explored the effects of these unprecedented payments on health

and well-being. However, there are challenges with interpreting much of this existing work as causal, given that other shocks happened at the same time as these payment streams and much of the existing work looks at how individual well-being correlated with individual payment receipt. For example, the bulk of the EIPs (stimulus payments) were paid out at the same time nationally, making it difficult to find a comparison group who would be unaffected to use as a counterfactual to net out the overall effects of COVID-19. In this paper, we instead leverage the decentralized nature of the U.S. UI system, which led states to start, and to some extent, end benefit payments for many of these new programs at different times. These delays and diverse implementation decisions for the new programs were driven by underlying differences in state UI systems and institutional capacity, and thus, were plausibly exogenous to the COVID-19 crisis and to national and even state responses to the crisis. We use a generalized difference-in-differences design and compare the effects of starting and ending these payments on multiple measures of well-being. Thus, our design compares outcomes in states that started or ended payments at a point in time to outcomes in states that experienced no such changes at the same time, controlling for COVID prevalence and other state characteristics as well as state and time effects. We use survey data on a large panel of households from USC's Understanding America Survey (UAS). The UAS is an online repeated panel that is nationally representative with high response rates and has been in existence since 2014, well before the pandemic. During COVID-19, the UAS collected information about food insecurity (using a commonly utilized 3-question screener) and well-validated measures of depression and anxiety. We find evidence that the start of payments improved well-being for certain groups who faced large negative shocks, mainly Hispanics and women.

2 Background

The unique circumstances of the COVID-19 pandemic and high unemployment rates led to the federal government deciding to relax a number of UI eligibility and payment rules. In normal times, the UI system requires that those who lose jobs for no fault of their own and have accrued sufficient earnings (and thus paid sufficient premia into the UI system) apply

for benefits after waiting one-week post job loss. The state then determines if the claim is valid by checking with employers and assessing other eligibility rules before issuing benefits. Individuals are required to attest that they are looking for work and have not accepted full-time employment before getting payments. Thus, self-employed or gig workers and new labor market entrants are generally ineligible for UI, as are immigrants unauthorized to work in the US. While some UI rules are uniform, states have leeway to set various program parameters such as the length of potential benefit receipt from the state-only program (often 6 months) and minimum earnings within a backward-looking base period of time (usually 1 year) to be eligible. States also administer their own UI systems, and there is widespread variation in what share of the workforce is insured (could be eligible for UI) as well as what share of the insured unemployed get benefits in normal circumstances. As noted above, however, the enormous negative economic shock associated with COVID-19 led to the federal government relaxing some of these rules and creating new programs. The four new UI programs were introduced relatively quickly after some of the first cases of COVID-19 in the US in March 2020. However, given the decentralized system, there was variation in how quickly states could adjust their system to accept applications and determine eligibility for the new programs (e.g., PUA). There was also variation in when states were able to send out the additional payments for these two programs and the top-up programs (FPUC, LWA). In this paper, we leverage variation in when states first were able to send out checks for the top-up FPUC and LWA programs as well as when PUA checks were first sent out to establish the impact of these payments in reducing hardship.. We also consider the effects of when weeks of benefits claimed ended (also the point at which benefits paid out ended) to better establish the impact of these payments in reducing hardship.

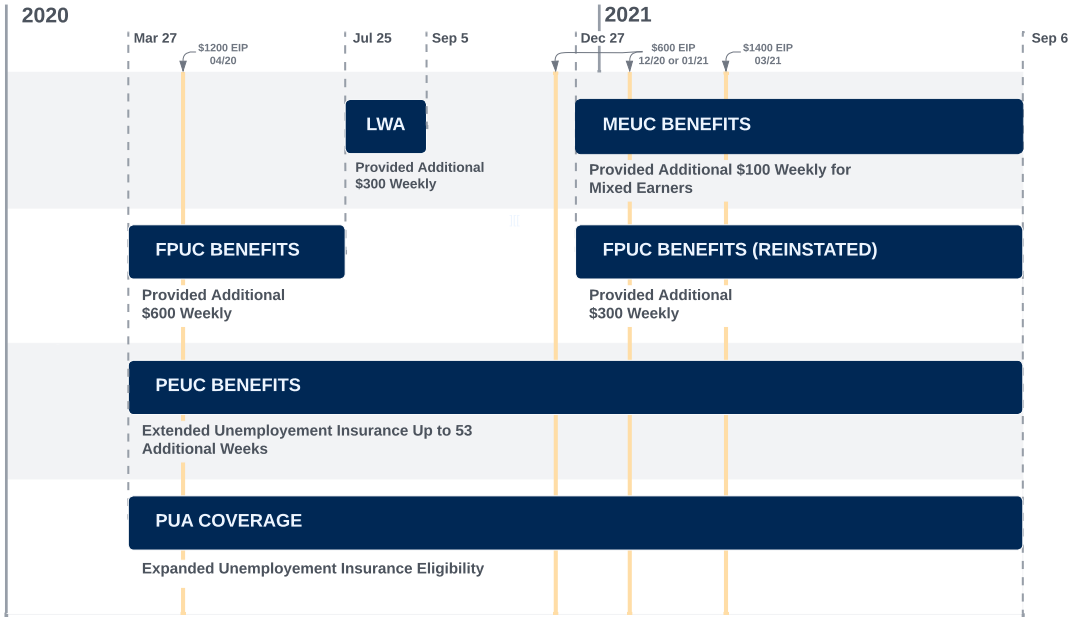
Why was there variation in the timing of payment flows? This arose from a variety of state choices about implementing new programs and variation in state administrative capacity. Regarding state choices, for example, in establishing PUA, states had to verify PUA recipients were ineligible for usual state UI program or they ran the risk of having to fund the PUA payments they sent out rather than having these PUA payments be federally funded. Obviously, this means states had a strong incentive to ensure payments for PUA

would be reimbursed fully by the federal government despite eligibility being assessed by the states. But some states chose to do this by assessing eligibility for both programs at the same time and funneling recipients into the right program while other states required that applicants apply for regular UI and be turned down for regular IU before applying for PUA and having their PUA eligibility evaluated. This likely led to differential waits after application and eligibility determination before payments could go out in different states to eligible recipients.

States also vary, even in the best of times, in administrative capacity, which affected how quickly they could set up the application and eligibility determination processes for the new programs. This also led to variation in the timing of payments going out to recipients. One example is Florida, which had set up a new UI system before COVID-19 that had not been tested. Florida's UI system struggled to determine applicants' eligibility during COVID-19 under the new computer system and reverted to a phone system. By contrast, New Hampshire was ahead of the game by setting up a system to pay UI to self-employed individuals before federal PUA was introduced. Given these examples, both of which applied to states with Republican governors, it is clear that some of the variation in when states were able to set up their systems and pay out funds was somewhat idiosyncratic. It also seems likely that states' pre-existing capacity might not be correlated with other aspects of the magnitude of the COVID-19 shock. We start by exploring the timing of federal authorization of the programs in Figure 1. Figure 1 shows a timeline of the unemployment insurance programs introduced by the three main legislative packages to provide relief from the negative economic impacts of COVID-19: the Coronavirus Aid, Relief, and Economic Security Act (Cares Act), the Consolidated Appropriations Act (CAA), and the American Rescue Plan (ARP). It also shows the dates when the bulk of the Economic Impact Stimulus (EIP) payments went out.

It is important to note some crucial features of the UI system that affect our analysis. In theory, there are two sources of variation that could be leveraged. First, there were differences in when states were able to accept claims (applications for benefits) under various programs for weeks of unemployment experienced. For example, the new PUA program was

Figure 1. Timeline of the Pandemic UI programs



Notes: This figure shows the timeline of the different unemployment insurance extensions carried out during the COVID-19 pandemic: the Federal Pandemic Unemployment Compensation (FPUC), the Pandemic Emergency Unemployment Compensation (PEUC), the Pandemic Unemployment Assistance (PUA), the Lost Wages Assistance (LWA) and the Mixed Earners Unemployment Compensation (MEUC). The figure also indicates the timing of the three Economic Impact Payments (EIPs). Note that this corresponds to the official period covered by each program, which doesn't necessarily correspond to actual payments since most payments were retroactive.

set up to pay out benefits for weeks experienced during COVID only but individuals had to apply to even be considered. The second source, which is our primary source of variation for the start of the programs, is when actual benefit payments were first sent out by state. Finally, for the end of the programs, at least with FPUC, the bulk of the final payments coincided with the end of the time period for which claims could be submitted (the state "UI" week ending on or before July 31, 2021).

Figure 2 shows the distribution of the first and last dates on which payments were issued for each of the pandemic Unemployment Insurance programs: FPUC, PEUC, PUA, LWA, and MEUC. Note that the legislative enactment date of 3/27/2020 is the first date when the expanded UI programs were authorized, but payments were not issued immediately as states had to set up infrastructure to determine eligibility and send out payments. The timing of implementation, even if introduced by the same relief package, varied widely

between states. Additionally, there was considerable variation across all of the programs in initiation but many coincided in when the last payments went out. The variation on the front end is broader and varies across the programs whereas more than one program then ended at the same time; yet, between June 2021–August 2021 there was extensive variation in when the programs ended. For example, the $600 FPUC top-up payments were approved in March 2020 and applied to payments for claims for weeks of unemployment starting in March 2020, but the first FPUC top-up payments were sent out between March 30 and April 29. Not surprisingly, setting up a new system to determine eligibility for the PUA program (which covered self-employed individuals and new entrants into the labor market) took longer for most states, with states' initial disbursal dates ranging from March 27 to May 29. The PEUC program had an even longer ramp-up, with disbursal dates for payments ranging from March 29th to July 27th. The initial FPUC top-ups only covered claims for UI through each state's "claiming" week that ended on or before July 31, 2020), and for the typical person claiming UI, most extra payments also stopped paying out during that week. We also note that PUA and PEUC were not ended in summer of 2020, but continued through until August 2021. All of these programs were terminated early in a subset of states (primarily those with Republican governors) that ended their state's programs due to concerns about the generous UI system making it hard to hire workers who had access to UI.

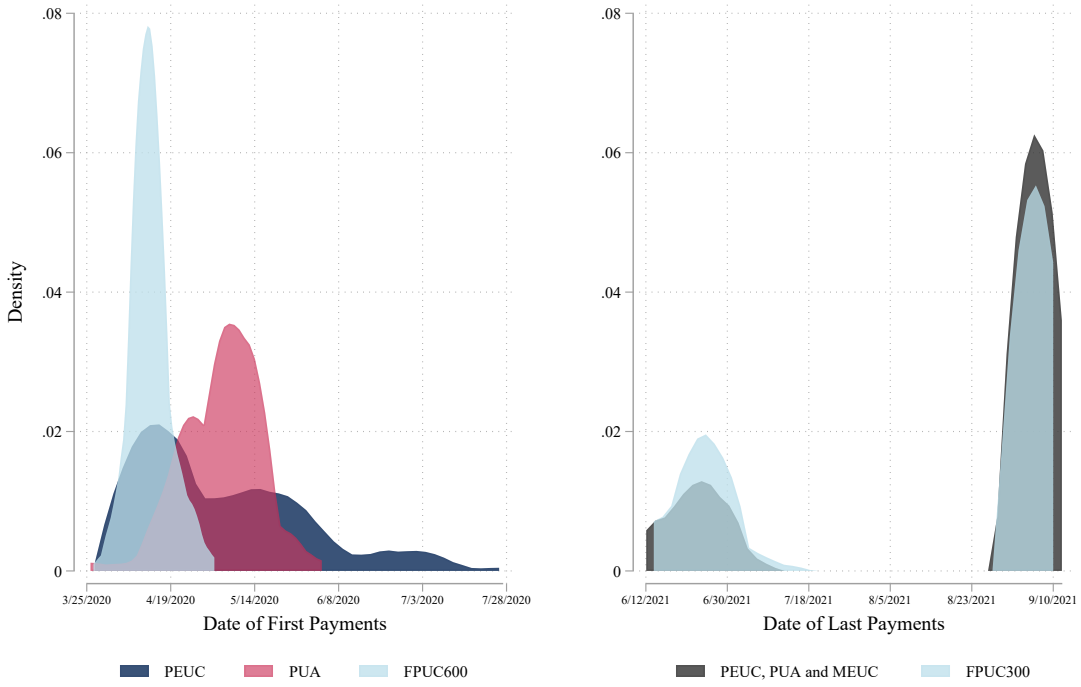
After the FPUC coverage of unemployment spells ended in late July, 2020; there was a five-to-six week delay until the top-up in the Lost Wages Assistance (LWA) program was established in Fall 2020. Due in part to LWA claims not being fully funded, there was a lull in additional support until the FPUC top-up was reintroduced in late 2020, with $300 per person/week for claims applying to weeks of unemployment claimed starting after December 26, 2020. The $300 top-up was later extended through August 2021.

Of course, to use these differing payment streams to determine effects of UI on outcomes, it is crucial that the payments do not happen at the same time as other fiscal responses or other COVID-19 shocks. Importantly, Figure 1 shows that the enactment of the economic impact stimulus payments, which were the broadest relief offered, did not correspond with

the first or last payments for *most* states.

Figures 1 and 2 make clear that the timing of first and last payments varied across places over time, and was also different from the bulk of the other relief payments that went out before the end of 2021.[1] This suggests that our analysis of the start and end dates of payments is likely to provide plausibly exogenous variation in when payments went out in ways not tied to the severity of the crisis or generosity of the federal government's stimulus payments, especially given our other controls for the severity of COVID-19 infection.

Figure 2. Distribution of the start of various state UI program payments and the end of UI payments, by program



Notes: This figure shows the timing of first payments and the termination of paid claim timing for the different pandemic-relief Unemployment Insurance programs.

[1]The Child Tax Credit was also expanded greatly by the ARP, but payments went out starting in July 2021. (Bauer et al., 2020, 2021, 2022) look at the effect of the rollout of Pandemic EBT—payments for missed school meals for students experiencing virtual school—on food security, but the earliest payments did not go out until December 2020.

3 Literature Review

The COVID-19 pandemic prompted a multitude of papers researching its impacts. Here we describe the work most closely related to studying the economic shock experienced and the response of the social safety net in general, and Unemployment Insurance in particular, on well-being in the United States (U.S.). The hardships of the pandemic were unevenly experienced and addressed. In the early days of the pandemic, Latinx workers had disproportionately high rates of unemployment compared with White workers, while Black workers, on average, remained employed in jobs deemed essential (Couch et al., 2020). Furthermore, groups who were initially hit harder (women, minorities, younger workers, less-educated workers) generally recovered faster as work resumed with the exception of Black workers (Lee et al., 2021). Yet, among these groups, the disproportionate burdens of the pandemic were especially acute for women who take on most of the unpaid household care-taking work (Gur et al., 2020; Power, 2020; Dinella et al., 2023). These disparities were exacerbated by UI program eligibility rules, administrative burden, and delays in benefit payments; though the exact extent of the disparities depends on measurement methods and timing in relation to the pandemic's start (Bitler et al., 2020; Carey et al., 2021; Forsythe, 2021).

For individuals who applied for and received unemployment insurance and had relatively high balances in their accounts, Ganong et al. (2020) explored replacement rates. They find that the FPUC top-up increased income replacement rates above 100% which reversed the usual group-level income disparities with some unemployed workers claiming UI netting more income than their employed counterparts in the same jobs pre-COVID. This phenomena was most prevalent for low-income workers (Ganong et al., 2020). Higher replacement rates were also associated with increased spending to the extent that unemployed workers spent at higher rates than did their employed counterparts. They also found that reductions in UI support due to funding decreases in UI or delays in providing benefits also decreased spending (Casado et al., 2023; Farrell et al., 2020; Dube, 2021; Cox et al., 2020). While unemployment benefits did have a significant impact on spending, they did

not impede job-finding behavior (Ganong et al., 2023). For EIP payments, Coibion et al. (2020) finds that, on average, most of the EIP payments went toward saving and/or paying off debt compared to spending for current consumption on average. However, as with the FPUC, EIP-related spending was higher among the unemployed, for individuals in larger and lower-income households, and for those with less education. Conversely, the practice of using this transfer to pay off debts was higher among Black people, older people, people with mortgages, and the unemployed; while people with higher incomes were more likely to save (Coibion et al., 2020).

Despite some initial financial reprieve for most from the relatively universal EIP support payments, the pandemic increased rates of poverty for adults and children due to work interruptions and stay-at-home orders. By September 2020, when program support had decreased, poverty was higher than before the pandemic or during April and May 2020 (Parolin et al., 2022; Han et al., 2020). Being financially fragile during the pandemic, defined as being unable to absorb a $2,000 shock, was associated with being young, low-income, Hispanic, female, and being in a larger household according to survey results (Clark et al., 2021).

Material suffering was widespread during the time covered by this study; leading to both worse physical health (mortality and morbidity from COVID and resulting from changes in employment, school enrollment, and child-care) and likely leading to worse mental health (from stress from the outbreak and from financial burdens). Thus, well-being and food insecurity were also important study endpoints for many researchers. Individual receipt of unemployment insurance was associated with improved well-being, including reduced food insecurity; however, benefits were not received by all individuals who needed them due to administrative burden, program availability, and lack of knowledge about benefits (Raifman et al., 2021; Berkowitz and Basu, 2021; Bitler et al., 2022). Google search data revealed that searches for "boredom," "loneliness," "worry," and "sadness" increased but searches for "stress," "suicide," and "divorce" decreased (Brodeur et al., 2021). From early in the pandemic (May 2020), survey results demonstrated that the pandemic was associated with greater food insecurity, worse mental health, and higher levels of loneliness; hardships born

disproportionately by those with a lack of access to food (due in part to closed food pantries), who are lower income, younger, and female (Giroux et al., 2022). Some authors found that food insecurity was higher during the pandemic despite programs aimed at easing additional hardships (Ahn and Norwood, 2021; Gundersen et al., 2021; Giroux et al., 2022). This is likely related to the relatively short time frame of support programs. When the FPUC $600 ended, just five months after the pandemic started, there was a reduction in spending on food and likelihood of food security estimated from the Household Pulse Survey (Dhakal et al., 2023). Regardless, the pandemic was broadly associated with poor mental health that was exacerbated by food insecurity (Wolfson et al., 2021). Yet these correlations may not accurately reflect the causal association of the expanded and existing UI programs and health, as they may also capture selection into use of UI.

However, there are a few papers using quasi-experimental variation to study the effects of the relief programs. (**?**) find that pandemic-EBT program–which provided replacement funding for absent school meals for families with school-age children—significantly decreased the probability of households reporting that they sometimes or often did not have enough to eat and that children did not have enough to eat. Like our paper, Bauer et al. (2022) focuses on differences across states over time when the P-EBT program was implemented. Pandemic-era support payments were also associated with improved maternal and infant health (Ruffini, 2023). And (Richterman et al., 2023) show that the ending of the maximum food stamp allotment early in some states lead to increases in food insecurity.

However, there is a challenge much of this literature faces in determining the effects of COVID aid in offsetting these negative shocks. Almost all of the existing papers look at individual receipt of benefit payments and outcomes, but this confounds receipt with both individual decisions to claim benefits and state and federal decisions about processing and paying out benefits. Further, a host of other policy responses at the federal, state, and local levels as well as location by time severity of COVID and access to vaccines and health care could also be correlated with an individual's receipt of COVID aid. By contrast, we are able to leverage changes in UI spending likely due to other causes such as pre-COVID state capacity to process claims and choices about eligibility determination which are not

correlated with individual decisions. (We also note our results are robust to controlling for other payment streams (SNAP) and the main effects of the bulk of the stimulus as well as COVID prevalence.) We are—to the best of our knowledge—the first to examine the effects of this quasi-experimental state-level variation in UI spending on food security and depression during COVID. We also note our results are robust to controlling for other payment streams (SNAP) and the main effects of the bulk of the stimulus as well as COVID prevalence.

4 Data

4.1 Key independent variables

Each state was responsible for setting up and executing the programs described above. Due to the large volume of increases in unemployment applications and administrative hurdles, many states experienced delays in payment. Our analysis hinges on having an accurate date for the first payments made by each state for the FPUC, PUA and LWA programs. In order to find and authenticate the first payment dates, the website of each state's labor department (the entity administering the state's Unemployment Insurance program) was scrubbed for press releases reporting exact dates when the state began mailing checks (or releasing funds through direct deposit) for each program. If the state's labor department did not report payment dates, local news outlets were searched for an unofficial date source. If the date was found through an unofficial source, at least one additional source was found reporting the same date to authenticate. If no date (or a date range) was located for payment start, we reached out to the state's labor department to gather the missing data.

4.2 Key dependent variables

Our measures of food security and mental health come from the Understanding America Survey (UAS) from the University of Southern California. This is a panel survey of households that is nationally representative of the U.S. The survey is conducted over the internet and includes approximately 10,000 respondents at each point in time. The UAS weekly

survey began in 2014 and includes rich measures of personal and household characteristics as well as established measures of food insecurity, mental well-being and health behaviors, including alcohol consumption. The UAS has high response and retention rates, relative to many other internet panels. Unlike some other data sets used to study COVID in real-time such as the Census Pulse, UAS reports of vaccination receipt accord well with population levels of vaccinations reported by federal sources. Our key outcomes are measures of food security and having enough food as well as a 4 question measure of depression and anxiety—the Patient Health Questionnaire-4, which is validated for use in non-clinical settings ((Kroenke et al., 2009). We also consider the use of alcohol (the number of days in the last 7 the respondent drank alcohol). Finally, we analyze an index of all of these outcomes to address concerns about multiple testing.

4.3 Other contextual controls

Lastly, to control for the severity of the pandemic, which itself could be correlated with unemployment and outcomes and possibly with timing, we include a control for COVID-19 severity, measured as hospitalizations per capita, from the Atlantic (2021).[2] We recognize that accurately measuring rates and severity of COVID-19 across the US was not an exact science. However, we note that the COVID Tracking Project took a multifaceted approach to data collection which came from state public health authority website and supplemental data files provided by the states. We point the reader to the Atlantic (2021) for additional detail on the COVID-19 data.

5 Empirical strategy

We exploit the staggered roll-out of states' first and final payment dates to estimate the impact of the start and end of various Pandemic-era UI programs on food security and well-being. We remind the reader that there is a distinction between when the new programs first accepted applications and determined eligibility and when the payments occurred. For

[2] Atlantic (2021) is a volunteer project from The Atlantic Monthly Group to collect and validate key measures of COVID-19 infection rates and hospitalizations from all US states and territories.

the beginning of the programs, we are focusing on the dates when the first payments were issued. For the final or end dates, by contrast, we are focusing on the last week for which benefits could be claimed. In the case of the larger programs, this date was also the date by which most people would have stopped getting benefits, and note that other work has found large consumption decreases with these ending dates (Ganong et al. (2023)).

Equation 1 represents our primary two-way fixed-effects specification:

$$y_{ist} = \beta_0 + \beta_1 Post_{st} + \phi_1 X_{ist} + \phi_2 Z_{st} + \delta_1 Covid_{st} + \sigma_s + \gamma_t + \varepsilon_{ist}, \quad (1)$$

where y_{ist} is one of our outcome variables for individual i in state s in calendar week and year t (time t). These include experiencing food insecurity, being likely to run out of food, being depressed, the number of days in the last 7 the person drank alcohol, and an index of these outcomes which is standardized to be mean 0 and SD 1.

Post equals 1 for dates after the first payments, or the ending, of a particular UI program in a particular state. X_{ist} is a vector of individual-level controls, including gender, age range, the number of children in the household, and the education level of the survey respondent. Z_{st} controls for SNAP disbursal dates during the month in the respondent's state of residence[3] The vast bulk of EIP payments went out very quickly and importantly at the same time across all states since these were federally administered, and thus, their impact should be netted out by the inclusion of time-of-survey fixed effects. For some of the UI program initial payments or endings, we also control for other UI intervention(s) in addition to the program we are focused on if some other program had changes that were close in timing. We also control for COVID-19 intensity in state s at time t by including the level of per capita hospitalizations for COVID-19 in the state. Finally, we include state and date-of-survey being-sent-out fixed effects to control for time-invariant differences across states and national shocks. This same specification is run for six different sub-samples: the full population, low-education individuals (at baseline), Hispanic individuals, Black

[3]For states that disburse payments on more than one day, it is one over the total number of days when payments are disbursed during the month.

individuals, men, and women respondents.[4] All specifications use variance estimates which allow arbitrary correlation of the errors by state to account for the fact that the policies vary at the state level and to deal with possible auto-correlation over time within state. We also restrict the time window to minimize overlap among the program start and end times. We use the UAS survey weights, used to make the data nationally representative.

6 Results

We start with the findings for the full sample. Table 1 presents the findings for the start (Panel A) and end (panel B) of the two FPUC programs ($600 and $300), PUA and LWA. Panel A suggests that there is no statistically significant effect of starting any of these programs on the full population in reducing the negative well-being outcomes we consider. While 12 of 16 point estimates are negative and 3 of the 4 point estimates for the index (column 5) are negative, this does not provide evidence that the programs helped the overall population. By contrast, the evidence that the effects (which all happened at the same time) of the end of the PEUC, PUA MEUC, and FPUC300 programs in July 2021 led to worsening mental health is clear from Panel B. Ending these programs lead to a statistically significant 0.046 standard deviation increase in the incidence of depression. The end of the $600 top up—FPUC600—is associated with a decline in the number of days alcohol was consumed by 0.070 which is statistically significant.

Of course, even with the unprecedented spending on UI during COVID-19, not everyone is receiving it. Appendix Tables 1–6 consider these same two-way fixed effects models and outcomes for our subgroups of interest who are likely to be at higher levels of need due to having lower resources and higher levels of unemployment and need on average. These tables consistently show positive effects of the start of the programs for some outcomes (some negative outcomes decline when various programs start). To summarize these findings, we turn to Figure 3. Figure 3 shows the effects of starting and ending the programs for each subgroup of interest in graphical form. The solid bars denote the 90 percent CIs and the lighter gray bars denote the 95 percent CIs. For the low-educated sample, likely to

[4]The UAS only allows individuals to identify as men or women.

Table 1. Effects of the implementation or ending of UI programs: full sample

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.030*	-0.022	-0.004	-0.032	-0.062
	(0.02)	(0.02)	(0.03)	(0.09)	(0.06)
PUA	-0.014	-0.012	-0.001	-0.254	-0.128
	(0.04)	(0.04)	(0.05)	(0.17)	(0.13)
LWA	0.008	0.007	0.001	0.022	0.024
	(0.01)	(0.01)	(0.01)	(0.03)	(0.02)
FPUC300	-0.009	-0.011	-0.005	-0.049	-0.043
	(0.01)	(0.01)	(0.01)	(0.04)	(0.03)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.023	0.025	0.049**	-0.121	0.064
	(0.02)	(0.02)	(0.02)	(0.10)	(0.05)
FPUC600	0.006	0.003	0.014	-0.071**	-0.000
	(0.01)	(0.00)	(0.01)	(0.04)	(0.02)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

be relatively low-wage workers, the start of the $600 FPUC top-up is associated with an economically meaningful decline of 0.14 standard deviations in the overall index of poor outcomes which is significant at the 10% level. For Hispanic individuals, the start of the same $600 FPUC top-up is associated with an even larger decline in the index of poor outcomes of 0.26 standard deviations (significant at the 1% level). Appendix Table 3 shows that this is driven mostly by declines in food insecurity and being worried one would run out of food. By contrast, there are no significant effects for Black individuals for the index, although there is a suggestion that PUA starting led to a large decline of 0.28 standard deviations in the depression index (significant at the 10% level). For women, there are quite large and economically meaningful estimates of the effects of starting these programs for the overall index of 0.33 standard deviations for starting PUA payments and a marginally significant but still large decline of 0.11 standard deviations with the start of the FPUC600 top-up payments. Appendix Table A5 shows the results for the constituent measures in the index. The start of 3 of the 4 programs led to reductions in food insecurity (a decline of 6 percent with the start of FPUC600, of 12 percent with the start of PUA, and of 2 percent with the start of LWA). These declines are also quite substantive, compared to overall mean levels of 11 percent of women saying they were food insecure.

It also led to a decline in the probability that people were worried they would run out of food with the start of FPUC600 (mean of 9 percent for women), and a marginally statistically significant decline in depression with the start of PUA. For men, there was little evidence of economically meaningful or statistically significant effects.

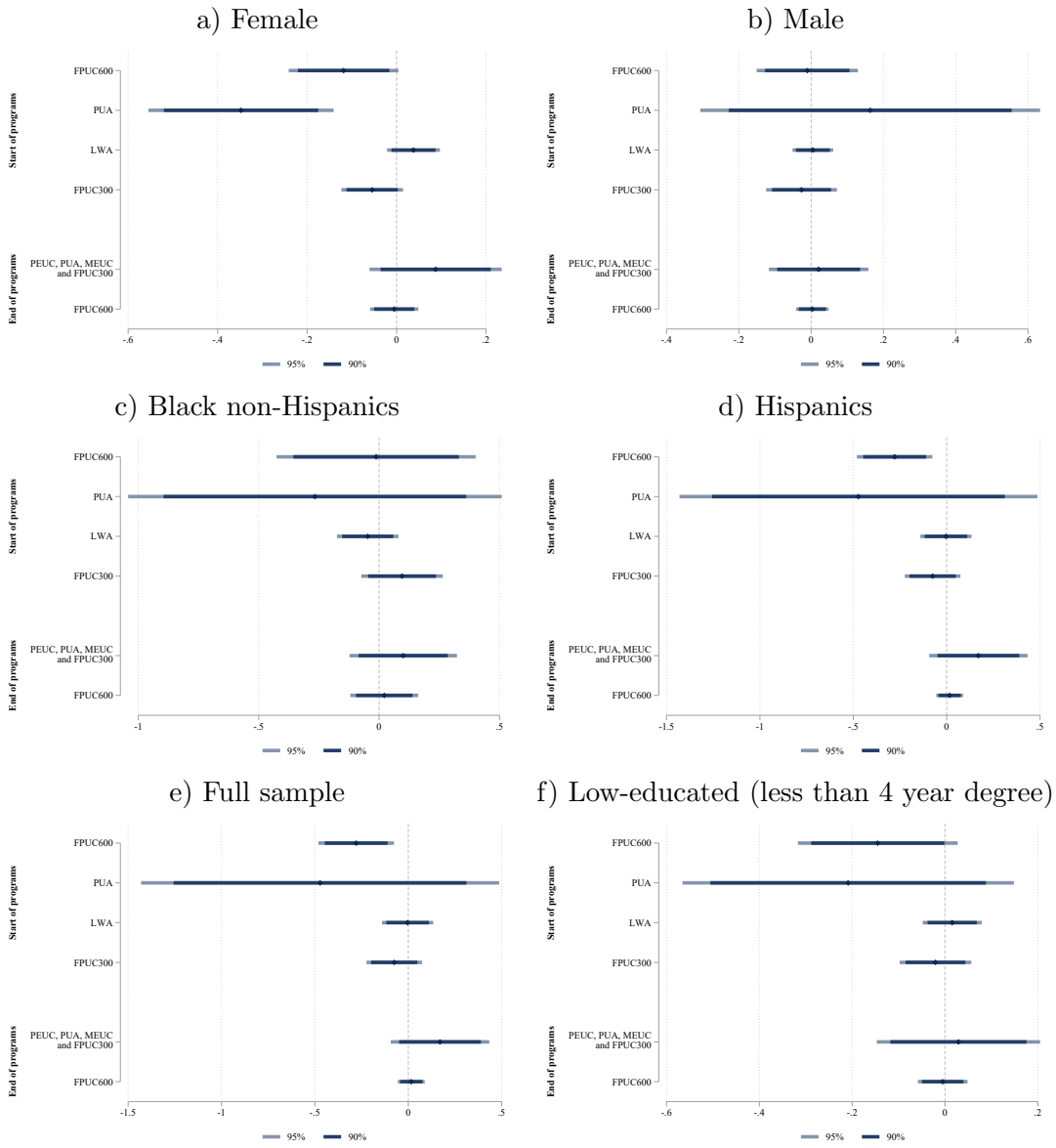
Overall, this leads to one to wonder: why are the effects concentrated among Hispanics and women? First, we note that these are two groups who suffered enormous job losses due to their being more prominent in the service sector which shut down (care-taking, education, restaurants, and food) as well as because in families with school-aged children, women stepped in when other care was unavailable (school closures or daycare closures). Earlier work suggests that Hispanic workers and working women were deferentially in jobs and industries before COVID-19 which were negatively affected by COVID (e.g. hospitality) (Couch et al., 2020). Our own tabulations of the Current Population Survey suggest that the increase in unemployment among women 18-64 from February to April 2020 was 8 percentage points, compared to an increase of 7 percentage points for men, and 9.3 percentage points for Hispanic adults 18-64 compared to 7.2 percentage points for white non-Hispanic adults 18-64. Possibly this reflects the additional burden of unpaid household care-taking work assumed by women during the pandemic such as schooling children and caring for ill loved ones (Gur et al., 2020; Power, 2020; Dinella et al., 2023).

One might also wonder if the groups we have found larger effects for are indeed likely to be eligible for UI during COVID. We note that other work suggests that large shares of Hispanics would likely be eligible for UI if they lost their jobs (Bitler et al., 2020), and similar calculations show that among Hispanics aged 20-59 working in 2019, 59% would have been eligible for UI under the rules in place pre-COVID-19 while 87% of women working in 2019 would have been eligible under similar rules.

7 Conclusion

In this paper, we have documented the role of the new expanded UI programs during COVID 19 in reducing suffering. These programs reduced hardship when they first paid out funds, and led to increased hardship when they ended (stopped accepting claims). Effects were

Figure 3. Heterogeneity: Effects of program start and ending on well-being index for different subsamples



Notes: This figure plots coefficients for the effect of starting or ending a given program on an index of well-being as estimated following equation 1. Each panel shows the results for different sub-samples consisting on our full sample, low-education individuals (no college), non-Hispanic Black individuals, and Hispanics. We use weights provided by the UAS survey intended to make the data nationally representative and standard errors are clustered by state.

particularly large for Hispanics and women, two groups who were particularly hard hit by negative employment shocks during COVID. This is important quasi-experimental evidence of the positive effects of expanding UI in reducing hardship.

References

Ahn, S. and F. B. Norwood (2021, March). Measuring Food Insecurity during the COVID-19 Pandemic of Spring 2020. *Applied Economic Perspectives and Policy 43*(1), 162–168.

Atlantic, T. (2021). The COVID Tracking Project: The Data.

Bauer, L., A. Pitts, K. Ruffini, and D. Whitmore Schanzenbach (2020). The effect of Pandemic EBT on measures of food hardship.

Bauer, L., K. Ruffini, and D. Schanzenbach (2021). An update on the effect of Pandemic EBT on measures of food hardship.

Bauer, L., K. Ruffini, D. Schanzenbach, and N. Tomeh (2022). Food Security Shouldn't Take a Summer Vacation. *The Hamilton Project*.

Berkowitz, S. A. and S. Basu (2021). Unemployment Insurance, Health-Related Social Needs, Health Care Access, and Mental Health During the COVID-19 Pandemic. *JAMA Internal Medicine 181*(5), 699.

Bitler, M., J. Cook, D. Horn, and N. Seegert (2022, December). Incomplete program take-up during a crisis: evidence from the COVID-19 shock in one U.S. state. *International Tax and Public Finance 29*(6), 1373–1394.

Bitler, M., H. Hoynes, and D. W. Schanzenbach (2020). The Social Safety Net in the Wake of COVID-19. *Brookings Papers on Economic Activity*, 119–145.

Brodeur, A., A. E. Clark, S. Fleche, and N. Powdthavee (2021, January). COVID-19, lockdowns and well-being: Evidence from Google Trends. *Journal of Public Economics 193*, 104346.

Carey, P., J. A. Groen, B. A. Jensen, A. E. Polivka, and T. J. Krolik (2021). Applying for and receiving unemployment insurance benefits during the coronavirus pandemic. *Monthly Labor Review*.

Casado, M. G., B. Glennon, J. Lane, D. McQuown, D. Rich, and B. Weinberg (2023). The Effect of Fiscal Stimulus: Evidence from COVID-19. Technical Report w27576, National Bureau of Economic Research, Cambridge, MA.

Clark, R. L., A. Lusardi, and O. S. Mitchell (2021). Financial Fragility during the COVID-19 Pandemic. *AEA Papers and Proceedings 111*, 292–296.

Coibion, O., Y. Gorodnichenko, and M. Weber (2020, August). How Did U.S. Consumers Use Their Stimulus Payments? Technical Report w27693, National Bureau of Economic Research, Cambridge, MA.

Couch, K. A., R. W. Fairlie, and H. Xu (2020, December). Early evidence of the impacts of COVID-19 on minority unemployment. *Journal of Public Economics 192*, 104287.

Cox, N., P. Ganong, P. Noel, J. Vavra, A. Wong, D. Farrell, F. Greig, and E. Deadman (2020). Initial Impacts of the Pandemic on Consumer Behavior: Evidence from Linked Income, Spending, and Savings Data. *Brookings Papers on Economic Activity*, 35–69.

Dhakal, C., Y. Luo, S. Wang, and C. Zhen (2023, September). Unemployment Insurance Benefit Reduction and Food Hardship. *Journal of Policy Analysis and Management*, pam.22531.

Dinella, L. M., K. Evans, J. A. Levinson, and S. Gagnon (2023, August). Women disproportionately shoulder burdens imposed by the global COVID-19 pandemic. *Journal of Social Issues*, josi.12591.

Dube, A. (2021). Aggregate Employment Effects of Unemployment Benefits During Deep Downturns: Evidence from the Expiration of the Federal Pandemic Unemployment Compensation.

Farrell, D., P. Ganong, F. Greig, M. Liebeskind, P. Noel, and J. Vavra (2020). Consumption Effects of Unemployment Insurance during the Covid-19 Pandemic. *SSRN Electronic Journal*.

Forsythe, E. (2021). Understanding Unemployment Insurance Recipiency During the Covid-19 Pandemic. *University of Illinois, Urbana-Champaign*.

Ganong, P., F. Greig, P. Noel, D. Sullivan, and J. Vavra (2023). Spending and Job-Finding Impacts of Expanded Unemployment Benefits: Evidence from Administrative Micro Data. Technical Report w30315, National Bureau of Economic Research, Cambridge, MA.

Ganong, P., P. Noel, and J. Vavra (2020, November). US unemployment insurance replacement rates during the pandemic. *Journal of Public Economics 191*, 104273.

Giroux, S., K. Waldman, M. Burris, J. C. D. Valliant, A. M. Babb, P. Stafford, D. Fobi, K. Czebotar, and D. C. Knudsen (2022). Food security and well-being among older, rural Americans before and during the COVID-19 pandemic. *PLOS ONE 17*(9), e0274020.

Gundersen, C., M. Hake, A. Dewey, and E. Engelhard (2021, March). Food Insecurity during COVID-19. *Applied Economic Perspectives and Policy 43*(1), 153–161.

Gur, R. E., L. K. White, R. Waller, R. Barzilay, T. M. Moore, S. Kornfield, W. F. Njoroge, A. F. Duncan, B. H. Chaiyachati, J. Parish-Morris, L. Maayan, M. M. Himes, N. Laney, K. Simonette, V. Riis, and M. A. Elovitz (2020, November). The Disproportionate Burden of the COVID-19 Pandemic Among Pregnant Black Women. *Psychiatry Research 293*, 113475.

Han, J., B. D. Meyer, and J. X. Sullivan (2020). Income and Poverty in the COVID-19 Pandemic. *Brookings Papers on Economic Activity 2020*(2), 85–118.

Kroenke, K., R. L. Spitzer, J. B. Williams, and B. Lowe (2009, November). An Ultra-Brief Screening Scale for Anxiety and Depression: The PHQ-4. *Psychosomatics 50*(6), 613–621.

Lee, S. Y., M. Park, and Y. Shin (2021). Hit Harder, Recover Slower? Unequal Employment Effects of the COVID-19 Shock. *Federal Bank of St. Louis 103*(4).

Parolin, Z., M. Curran, J. Matsudaira, J. Waldfogel, and C. Wimer (2022, September). Estimating Monthly Poverty Rates in the United States. *Journal of Policy Analysis and Management 41*(4), 1177–1203.

Power, K. (2020, December). The COVID-19 pandemic has increased the care burden of women and families. *Sustainability: Science, Practice and Policy 16*(1), 67–73.

Raifman, J., J. Bor, and A. Venkataramani (2021, January). Association Between Receipt of Unemployment Insurance and Food Insecurity Among People Who Lost Employment During the COVID-19 Pandemic in the United States. *JAMA Network Open 4*(1), e2035884.

Richterman, A., C. A. Roberto, and H. Thirumurthy (2023, August). Associations Between Ending Supplemental Nutrition Assistance Program Emergency Allotments and Food Insufficiency. *JAMA Health Forum 4*(8), e232511.

Ruffini, K. (2023). Does Unconditional Cash during Pregnancy Affect Infant Health?

Wolfson, J. A., T. Garcia, and C. W. Leung (2021). Food Insecurity Is Associated with Depression, Anxiety, and Stress: Evidence from the Early Days of the COVID-19 Pandemic in the United States. *Health Equity 5*(1), 64–71.

A Appendix: Tables and Figures

A.1 Heterogeneity analysis

Appendix Table A1. Effects of the implementation or ending of UI programs: Individuals with low education (less than college)

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.044	-0.028	-0.040	-0.095	-0.145*
	(0.03)	(0.03)	(0.04)	(0.11)	(0.09)
PUA	-0.050	-0.022	-0.008	-0.243	-0.209
	(0.05)	(0.05)	(0.06)	(0.23)	(0.18)
LWA	0.008	0.004	0.002	0.006	0.016
	(0.01)	(0.01)	(0.02)	(0.05)	(0.03)
FPUC300	-0.002	-0.007	0.003	-0.039	-0.020
	(0.01)	(0.01)	(0.02)	(0.05)	(0.04)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.003	0.010	0.030	-0.056	0.029
	(0.04)	(0.03)	(0.04)	(0.13)	(0.09)
FPUC600	0.004	-0.001	0.001	-0.024	-0.005
	(0.01)	(0.01)	(0.02)	(0.05)	(0.03)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A2. Heterogeneity analysis: Black individuals

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	0.016	-0.043	-0.006	0.175	-0.012
	(0.09)	(0.08)	(0.06)	(0.19)	(0.20)
PUA	0.091	0.111	-0.276*	-0.387	-0.266
	(0.14)	(0.16)	(0.15)	(0.62)	(0.34)
LWA	0.010	0.003	-0.015	-0.132	-0.047
	(0.03)	(0.03)	(0.02)	(0.09)	(0.06)
FPUC300	0.028	0.013	-0.008	0.200	0.096
	(0.03)	(0.03)	(0.03)	(0.15)	(0.08)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.084	0.064	0.008	-0.154	0.101
	(0.06)	(0.05)	(0.08)	(0.30)	(0.11)
FPUC600	-0.003	0.006	0.013	0.021	0.022
	(0.02)	(0.02)	(0.02)	(0.07)	(0.07)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A3. Heterogeneity analysis: Hispanic individuals

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.119*	-0.147**	-0.046	0.232	-0.279***
	(0.06)	(0.06)	(0.08)	(0.36)	(0.10)
PUA	-0.057	-0.061	-0.124	-0.629	-0.473
	(0.19)	(0.17)	(0.11)	(0.39)	(0.44)
LWA	0.004	0.007	-0.009	-0.023	-0.004
	(0.02)	(0.02)	(0.03)	(0.08)	(0.07)
FPUC300	-0.036**	-0.035*	-0.019	0.064	-0.075
	(0.02)	(0.02)	(0.04)	(0.07)	(0.07)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	-0.048*	-0.006	0.064*	0.472*	0.170
	(0.03)	(0.03)	(0.04)	(0.26)	(0.13)
FPUC600	0.019	0.006	0.037	-0.136*	0.016
	(0.02)	(0.01)	(0.03)	(0.07)	(0.04)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table A4. Heterogeneity analysis: Male respondents

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	0.005	0.015	-0.012	-0.080	-0.011
	(0.02)	(0.02)	(0.03)	(0.12)	(0.07)
PUA	0.084	0.017	0.088	-0.033	0.163
	(0.05)	(0.05)	(0.07)	(0.34)	(0.23)
LWA	-0.004	-0.004	0.000	0.044	0.005
	(0.01)	(0.01)	(0.01)	(0.06)	(0.03)
FPUC300	-0.001	-0.006	0.003	-0.061	-0.027
	(0.01)	(0.01)	(0.02)	(0.06)	(0.05)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.033	0.033	0.030	-0.269*	0.021
	(0.02)	(0.03)	(0.03)	(0.16)	(0.07)
FPUC600	0.005	0.005	0.013	-0.063	0.003
	(0.01)	(0.01)	(0.02)	(0.06)	(0.02)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix Table A5. Heterogeneity analysis: Female respondents

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.061***	-0.055***	-0.006	0.007	-0.118*
	(0.02)	(0.02)	(0.04)	(0.09)	(0.06)
PUA	-0.121***	-0.056	-0.094*	-0.208	-0.348***
	(0.04)	(0.04)	(0.05)	(0.24)	(0.10)
LWA	0.020**	0.016*	-0.004	0.011	0.038
	(0.01)	(0.01)	(0.01)	(0.03)	(0.03)
FPUC300	-0.014	-0.013	-0.015	-0.031	-0.054
	(0.01)	(0.01)	(0.01)	(0.04)	(0.03)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.024	0.028	0.048	-0.047	0.087
	(0.03)	(0.03)	(0.03)	(0.09)	(0.07)
FPUC600	0.006	0.001	0.017	-0.090***	-0.005
	(0.01)	(0.01)	(0.01)	(0.03)	(0.03)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A6. Heterogeneity analysis: Female x White

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.064***	-0.046**	-0.003	-0.038	-0.103**
	(0.02)	(0.02)	(0.03)	(0.11)	(0.05)
PUA	-0.081**	-0.023	-0.155**	-0.052	-0.248*
	(0.04)	(0.03)	(0.07)	(0.24)	(0.13)
LWA	0.016	0.018**	-0.008	0.044	0.045
	(0.01)	(0.01)	(0.02)	(0.05)	(0.04)
FPUC300	-0.007	-0.012	0.006	-0.050	-0.032
	(0.01)	(0.01)	(0.02)	(0.05)	(0.03)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.024	0.017	0.084**	-0.231**	0.052
	(0.03)	(0.02)	(0.03)	(0.12)	(0.07)
FPUC600	-0.001	0.003	0.004	-0.118***	-0.031
	(0.01)	(0.01)	(0.02)	(0.04)	(0.03)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A7. Heterogeneity analysis: Female x Black

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.011	-0.076	0.006	0.202	-0.043
	(0.10)	(0.09)	(0.07)	(0.20)	(0.23)
PUA	-0.268	-0.022	-0.181**	-0.280	-0.237
	(0.21)	(0.03)	(0.08)	(1.01)	(0.22)
LWA	0.054*	0.041	0.013	-0.110	0.069
	(0.03)	(0.03)	(0.03)	(0.12)	(0.06)
FPUC300	0.047	0.027	-0.075**	0.251	0.084
	(0.03)	(0.04)	(0.03)	(0.17)	(0.10)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.029	0.046	-0.069	0.075	0.011
	(0.05)	(0.05)	(0.10)	(0.25)	(0.15)
FPUC600	-0.007	0.003	0.015	-0.070	-0.007
	(0.03)	(0.02)	(0.03)	(0.06)	(0.07)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A8. Heterogeneity analysis: Female x Hispanic

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.106*	-0.179***	-0.021	0.363	-0.246
	(0.06)	(0.05)	(0.12)	(0.37)	(0.19)
PUA	-0.029	-0.021	-0.044	-0.027	-0.260
	(0.07)	(0.07)	(0.09)	(0.48)	(0.22)
LWA	-0.014	-0.013	-0.012	-0.148*	-0.088
	(0.02)	(0.02)	(0.03)	(0.09)	(0.06)
FPUC300	-0.057***	-0.044**	-0.067	-0.026	-0.186***
	(0.02)	(0.02)	(0.04)	(0.11)	(0.07)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	-0.046	0.012	0.039	0.278	0.104
	(0.07)	(0.06)	(0.08)	(0.42)	(0.15)
FPUC600	0.022	-0.007	0.056*	-0.098	0.033
	(0.02)	(0.02)	(0.03)	(0.06)	(0.04)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A9. Including retired: Full sample

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.025	-0.019	-0.004	-0.046	-0.058
	(0.02)	(0.02)	(0.03)	(0.09)	(0.05)
PUA	-0.013	-0.011	-0.002	-0.248	-0.128
	(0.04)	(0.04)	(0.05)	(0.17)	(0.14)
LWA	0.007	0.006	0.002	0.017	0.021
	(0.01)	(0.01)	(0.01)	(0.03)	(0.02)
FPUC300	-0.008	-0.011	-0.005	-0.039	-0.038
	(0.01)	(0.01)	(0.01)	(0.04)	(0.04)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.019	0.023	0.043**	-0.145	0.045
	(0.02)	(0.02)	(0.02)	(0.11)	(0.05)
FPUC600	0.006	0.003	0.013	-0.064*	0.003
	(0.01)	(0.00)	(0.01)	(0.04)	(0.02)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A10. Including retired: Females

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.056***	-0.052**	-0.005	0.008	-0.109*
	(0.02)	(0.02)	(0.03)	(0.09)	(0.06)
PUA	-0.120***	-0.055	-0.094*	-0.214	-0.351***
	(0.04)	(0.04)	(0.05)	(0.24)	(0.10)
LWA	0.019**	0.016	-0.004	0.012	0.038
	(0.01)	(0.01)	(0.01)	(0.04)	(0.03)
FPUC300	-0.012	-0.013	-0.014	-0.030	-0.051
	(0.01)	(0.01)	(0.01)	(0.04)	(0.03)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.020	0.024	0.043	-0.063	0.070
	(0.03)	(0.03)	(0.03)	(0.09)	(0.08)
FPUC600	0.006	0.003	0.015	-0.095***	-0.006
	(0.01)	(0.01)	(0.01)	(0.03)	(0.03)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A11. Including retired: Males

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	0.009	0.018	-0.010	-0.129	-0.017
	(0.02)	(0.02)	(0.03)	(0.12)	(0.07)
PUA	0.078	0.012	0.082	0.006	0.158
	(0.05)	(0.05)	(0.07)	(0.35)	(0.23)
LWA	-0.005	-0.005	0.001	0.034	0.001
	(0.01)	(0.01)	(0.01)	(0.06)	(0.03)
FPUC300	-0.002	-0.007	0.004	-0.035	-0.020
	(0.01)	(0.01)	(0.02)	(0.07)	(0.05)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.031	0.034	0.026	-0.285*	0.012
	(0.02)	(0.02)	(0.03)	(0.16)	(0.06)
FPUC600	0.005	0.005	0.014	-0.043	0.010
	(0.01)	(0.01)	(0.02)	(0.06)	(0.02)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A12. Including retired: Low education individuals

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.037	-0.023	-0.035	-0.099	-0.130
	(0.03)	(0.03)	(0.04)	(0.10)	(0.08)
PUA	-0.050	-0.022	-0.008	-0.243	-0.211
	(0.05)	(0.05)	(0.06)	(0.23)	(0.18)
LWA	0.008	0.004	0.002	0.016	0.018
	(0.01)	(0.01)	(0.02)	(0.05)	(0.03)
FPUC300	-0.002	-0.007	0.005	-0.017	-0.013
	(0.01)	(0.01)	(0.02)	(0.05)	(0.04)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	-0.004	0.008	0.028	-0.065	0.017
	(0.03)	(0.03)	(0.03)	(0.13)	(0.08)
FPUC600	0.004	0.000	-0.000	-0.019	-0.003
	(0.01)	(0.01)	(0.01)	(0.05)	(0.03)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A13. Including retired: Blacks

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	0.017	-0.042	-0.009	0.153	-0.018
	(0.08)	(0.07)	(0.06)	(0.19)	(0.19)
PUA	0.091	0.111	-0.276*	-0.387	-0.264
	(0.14)	(0.16)	(0.15)	(0.62)	(0.34)
LWA	0.009	0.003	-0.013	-0.115	-0.041
	(0.03)	(0.03)	(0.02)	(0.08)	(0.06)
FPUC300	0.026	0.012	-0.005	0.264	0.115
	(0.03)	(0.03)	(0.03)	(0.16)	(0.08)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	0.056	0.051	0.004	-0.138	0.065
	(0.06)	(0.05)	(0.08)	(0.28)	(0.11)
FPUC600	-0.004	0.005	0.013	0.048	0.029
	(0.02)	(0.02)	(0.02)	(0.07)	(0.06)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

Appendix Table A14. Including retired: Hispanics

	Food insecure	Run out of food	Depression	Alcohol	Index
Panel A: Start of programs					
FPUC600	-0.115*	-0.140**	-0.038	0.252	-0.255**
	(0.06)	(0.06)	(0.08)	(0.34)	(0.10)
PUA	-0.057	-0.061	-0.124	-0.629	-0.473
	(0.19)	(0.17)	(0.11)	(0.39)	(0.45)
LWA	0.001	0.004	-0.009	-0.023	-0.010
	(0.02)	(0.02)	(0.03)	(0.08)	(0.06)
FPUC300	-0.034*	-0.035*	-0.021	0.068	-0.076
	(0.02)	(0.02)	(0.03)	(0.08)	(0.08)
Panel B: End of programs					
PEUC, PUA MEUC, FPUC300	-0.057**	-0.016	0.032	0.390	0.089
	(0.03)	(0.03)	(0.04)	(0.25)	(0.15)
FPUC600	0.019	0.007	0.036	-0.135*	0.018
	(0.02)	(0.01)	(0.03)	(0.07)	(0.03)

Standard errors in parentheses are clustered at the state-level. Each row represents the results of the regression of well-being outcomes on the start or end of a given program. All regressions include a vector of individual-level controls, SNAP disbursal dates, and COVID-19 hospitalizations; as well as state and date-of-survey fixed effects.
* p < 0.10, ** p < 0.05, *** p < 0.01

A.2 Summary statistics

Appendix Table A15. Summary statistics for the estimation sample

	Full		Male		Female		Low education		Black		Hispanic	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Demographics												
Black	0.13	0.34	0.10	0.30	0.15	0.36	0.16	0.37	1.00	0.00	0.00	0.00
Hispanic	0.20	0.40	0.17	0.38	0.21	0.41	0.21	0.40	0.00	0.00	1.00	0.00
Female	0.55	0.50	0.00	0.00	1.00	0.00	0.57	0.50	0.64	0.48	0.60	0.49
Age: 25-44	0.52	0.50	0.51	0.50	0.54	0.50	0.46	0.50	0.50	0.50	0.57	0.50
Age: 45-64	0.40	0.49	0.44	0.50	0.37	0.48	0.43	0.50	0.44	0.50	0.35	0.48
Married	0.54	0.50	0.60	0.49	0.49	0.50	0.48	0.50	0.31	0.46	0.54	0.50
Number of kids	0.43	0.49	0.40	0.49	0.45	0.50	0.41	0.49	0.38	0.49	0.48	0.50
Max. education												
Less than highschool	0.08	0.27	0.08	0.27	0.08	0.28	0.15	0.36	0.12	0.32	0.08	0.27
High-school	0.29	0.45	0.27	0.45	0.29	0.46	0.53	0.50	0.32	0.47	0.26	0.44
Some college	0.17	0.38	0.16	0.37	0.18	0.38	0.32	0.47	0.23	0.42	0.23	0.42
Bachelor's	0.31	0.46	0.32	0.46	0.31	0.46	0.00	0.00	0.23	0.42	0.32	0.46
Master or PhD	0.15	0.36	0.17	0.38	0.13	0.34	0.00	0.00	0.11	0.31	0.12	0.33
Outcomes												
Food Insecurity	0.10	0.29	0.08	0.27	0.11	0.31	0.13	0.34	0.14	0.35	0.13	0.34
Run out of food	0.08	0.27	0.06	0.24	0.09	0.29	0.11	0.32	0.11	0.32	0.11	0.31
Depressed	0.32	0.47	0.27	0.44	0.36	0.48	0.32	0.47	0.22	0.41	0.31	0.46
Alcohol (days per week)	1.15	1.86	1.39	2.07	0.94	1.65	0.94	1.76	0.99	1.71	0.84	1.54
Well-being index	-0.03	1.01	-0.03	1.00	-0.03	1.01	-0.02	1.07	-0.10	1.06	-0.07	1.04
Observations	132109		50342		81766		56744		11251		24809	