Poverty Reduction is Not the Whole Story: The COVID-19 Pandemic Response in Relation to Material Hardship

Patrick Meehan[1] · Trina Shanks[1]

Abstract

As an absolute measure of deprivation poverty fails to capture the impact pandemic-related disruptions had on households. In this study, we use data from the Ypsilanti COVID-19 Study, a cross-sectional survey of 609 residents taken during the summer of 2020, to control for pandemic-related disruptions on bill-paying and food hardship. Using logistic regression models in which specific forms of bill-paying (i.e. late paying rent, late paying utilities) and food hardships (i.e. eating less over 7 days, worried food will run out) served as dependent variables, we find that disruptions to household finances, particularly job loss, significantly increased the likelihood of experiencing bill-paying and food hardship, respectively. Our study also controls for the type of hardship experienced to see which strategies households employed during the pandemic to exit material hardship. Through logistic regression models on methods of exiting material hardship, we find the type of hardship experienced was not predictive of applying for either SNAP or UI. Moreover, we find UI was less accessible to low-income individuals experiencing hardship. The findings from our study elaborate the relationship between pandemic-related disruptions and material hardship, and indicate to policymakers that preventing hardship in the first place is much more meaningful to households than attempting to use policy to bring households out of hardship once they experience it.

Keywords COVID-19 · Material hardship · Poverty · Food insecurity · Rent · Utilities

Introduction

Almost three years on, there has been considerable research that the COVID-19 pandemic response worked well to keep families from falling into poverty. The combination of Economic Impact Payments and the Pandemic Unemployment Compensation program not only kept families from falling into poverty (Han et al., 2020; Karpman & Zuckerman, 2021; Parolin et al., 2020), but actually increased household incomes above replacement wages, particularly for low-income families (Ganong et al., 2020). Material well-being mirrored the policy response such that the expiration of pandemic-related changes to Unemployment Insurance (UI) in September 2020 led to increased food insecurity and housing hardships (Cooney & Shaefer, 2021).

Substantial variation existed in the pandemic experiences of people of color and households with children at the time.

O'Reilly (2020) observes that COVID-19 was not "an equal opportunity pandemic" (p. 12). Rather, those impacted the most were "the most marginalized" (p. 12). Gupta et al. (2020) found in their nationally representative survey of adults in September 2020 that four in ten families of color reported food insecurity in the prior 30 days, triple the rate of White families, and that more than three in ten families of color worried about having enough to eat.

Consequently, many observations on the policy response to COVID-19 have focused not on poverty, which is an absolute measure of well-being, but rather on material hardship. Heflin et al. (2009) conceive of material hardship as the ability of households to meet basic necessities such as food, shelter, and medical care. The traditional poverty measure ignores these forms of consumption. With respect to food, Schanzenbach (2020) defines food insecurity as the inability to have "consistent, dependable access to enough food to live an active, healthy lifestyle" (p. 2). Accordingly, Schanzenbach and Pitts (2020) observe that in the early months of the pandemic, food insecurity tripled among households with children. Keith-Jennings et al. (2021) similarly observe food hardship in Black and Latino households (see also Karpman

✉ Patrick Meehan
  pjmeeh@umich.edu

1 School of Social Work, University of Michigan, Ann Arbor, MI, USA

et al., 2020). In March 2021, these households were more than twice as likely as White adults to report that their household did not get enough to eat in the last seven days.

These accounts suggest that far from holding hardship at bay, the policy response was inadequate to keep families with children from suffering during the pandemic. Elliott et al. (2021) similarly find in their sample of mothers and grandmothers that COVID increased household expenses, particularly for those "with more people at home all day" (p. 4).

In this study, we revisited the summer of 2020 to better understand how pandemic-related disruptions impacted material hardship for vulnerable households. We used data from the Ypsilanti COVID-19 Study to measure the impact of COVID-19-related disruptions on two specific types of material hardship—bill-paying and food security—among an over sample of people of color, low-income households, and families with children. We further considered strategies households experiencing hardship took to access the safety net or earn extra money. We found people of color, low-income households, and families with children were indeed more likely to experience hardship, and that disruptions to household finances were more associated with food and bill-paying hardship than disruptions to health or household composition. And despite its fanfare as a bulwark against increased poverty during the pandemic (Ganong et al., 2020), we found that UI was less accessible to low-income households experiencing hardship. The results of this study provide new insight on the impact of pandemic-related disruptions on material hardship that can inform the policy response in the future. Far from staving off hardship, the pandemic response in the U.S. left people of color and families with children hungry and unable to pay their rent and utilities.

Literature

To understand how the pandemic response prevented poverty but nevertheless contributed to hunger and hardship it is necessary to explain the difference between poverty and material hardship. The federal poverty measure calculates an "Economy Meal Plan" for a given family size multiplied by three (Heflin et al., 2009, p. 747). Everyone under the threshold is poor while everyone over is not, regardless of the cost of living, or the fact that groceries account for far less of a household's budget than was the case when the measure was created in 1963. In this way, household income is treated as an absolute barometer of deprivation. Material hardship, on the other hand, recognizes income as instrumental to deprivation, but that deprivation itself is experienced when basic needs such as food, shelter, and medical care go unmet (Heflin et al., 2009). These basic needs represent patterns

of household consumption (Farrell et al., 2020; Han et al., 2020) that respond much more abruptly to changes in circumstance than can be captured from an annualized measure of poverty (Heflin, 2016; Heflin & Butler, 2012).

In the early months of the pandemic there was a focus on changes in household circumstances was appropriate. For example, Despard et al. (2020) observed in their nationally representative sample from April to May 2020 that households experiencing COVID-related job loss were two to three times more likely to experience hardships such as difficulty paying for housing and putting off medical care. Using data from the Well-Being and Basic Needs Survey, Karpman and Zuckerman (2021) identified that respondents whose households lost jobs during the pandemic were nearly three times as likely to report problems paying utilities, and nearly four times as likely to report problems paying their rent or mortgage than respondents who did not lose jobs. Schanzenbach (2020) separately found that among respondents to the Household Pulse Survey from the U.S. Census Bureau, 21% of those who lost jobs during COVID-19 reported not having enough to eat.

Recognizing that the poverty measure, as designed, was unresponsive to the onset of the pandemic, several researchers attempted to perform updates in real time to demonstrate pandemic-related deprivation and the responsiveness of public policy. Han et al. (2020) use a question on the total cash income for the householder's family for the previous 12 months on the Basic Monthly Current Population Survey and compare that to official poverty thresholds to calculate the monthly poverty rate from January to December 2020. Parolin et al. (2020) use the same data to create their own monthly poverty measure for October 2019 to September 2020, based on projections of a family unit's monthly resources. Parolin and colleagues use their derived measure to show policies from the CARES Act—the Economic Impact Payments and the Pandemic Unemployment Program—blunted a rise in poverty until the expiration of the $600 weekly UI supplement at the end of July 2020.

Even these adjustments to poverty calculations, though, obfuscate the disruption the pandemic caused families. Elliott et al. (2021) interview 54 mothers and grandmothers in North Carolina to better understand their experience navigating the social safety net at the height of COVID-19. They find nearly all of their subjects' household bills had increased with more people at home, making the usual strategies for stretching food out for the month less effective. Mothers were the most unsung of all the heroes of the pandemic, according to O'Reilly (2020), who writes, "no one is recognizing let along supporting mothers as frontline workers or acknowledging and appreciating what mothers are managing and accomplishing in their homes under unimaginable circumstances" (p. 12). Monte (2020) uses data from the Household Pulse Survey to note that in

the early months of the pandemic adults living with children were more likely to report not having enough to eat than adults not living with children. In this context, SNAP was much more helpful to families during the pandemic than the $600 UI supplement (Elliott et al., 2021; Hembre, 2020; Moffitt & Ziliak, 2020).

Parolin (2021) also observes that people of color can question the poverty-reducing accomplishments of the pandemic response. For example, "72% of families report that they also experienced food insufficiency prior to the onset of the pandemic" (p. 1). Indeed, using Household Pulse Survey data Keith-Jennings et al. (2021) find that one-fifth of children in Black and Latino households did not have enough to eat in the last seven days, three times the rate of White children. Pandemic-related jobs losses were highest among Latino households, while Black households were significantly more likely than White households to have difficulty making housing and other bill payments (Despard et al., 2020).

Deprivations such as missed or delayed payments and food insecurity in the spring and summer of 2020 are understood to be related to COVID-19. But the sheer vastness of the disruption the pandemic wrought—job losses, household composition changes, health complications, etc.—obscures precisely which disruptions were most meaningful to household hardships. Identifying the relationship between specific forms of disruption to specific forms of hardship is not a picayune exercise; it is vital to our understanding of the effectiveness of the pandemic response.

Heflin and Butler (2012) speculate that bill-paying hardships and food hardships represent distinct constructs that cannot be reduced to a unidimensional understanding of hardship. Food hardships are distinct from bill-paying hardships for a variety of reasons according to Heflin et al. (2009). First, more so than bill-paying, food consumption is sensitive to income fluctuations. Second, food hardships vary in their duration, from a few days to a few months in most cases. Third, food hardships can be concentrated within different members of the household. Caregivers, for example, can go without food in favor of their children in a way that cannot be done with bill-paying. For their part, Heflin et al. suggest bill-paying hardships may be distinct from food hardships because the processes resulting from an inability to pay basic bills are themselves unique. The first missed payment, for example, either for rent or utilities, rarely results in catastrophic consequences, and households can negotiate their payments before the consequences begin to escalate. In the early months of the COVID-19 pandemic many states and the Centers for Disease Control had instituted eviction moratoria. This may have given households the flexibility to relax their bill-paying priorities in favor of food.

All of this is to suggest that each pandemic-related disruption may not have contributed equally to each household hardship. Using data from the Survey of Income and Program Participation, Heflin (2016) finds that job loss, controlling for other forms of disruption, predicts both bill-paying and food hardships. Given the eviction moratoria in place during the pandemic, though, job loss may have had no relationship to late or missed rent payments (see Despard et al., 2020). Similarly, it may be an oversimplification to associate pandemic-related job loss with food insecurity (see Karpman & Zuckerman, 2021; Schanzenbach, 2020) without controlling for additional factors such as pandemic-related changes in health or household composition. No study has previously attempted to disentangle the impact COVID-related disruptions had on bill-paying and food hardships, respectively.

In a similar fashion, each policy response to the pandemic may have distinct relationships to multiple hardships. Heflin and Butler (2012) find that the distinctiveness of bill-paying and food hardships, respectively, influences the strategies households use to exit them (see also Heflin et al., 2011). Food hardships can be massaged, they find, through the stretching of groceries and the foregoing of meals in ways that bill-paying hardships cannot. In this way, the existence of eviction moratoria in the first year of the pandemic may have allowed families to triage their bill-paying hardships in favor of food in ways not possible before the pandemic. This policy response may have been particularly helpful for households not otherwise eligible for the expanded UI benefits.

Given that the inaccessibility of expanded UI benefits to low-income families was recognized at the time (Han et al., 2020; Moffitt & Ziliak, 2020), caution is warranted in ascribing too much credit for their ability to pull households out of hardship. In other words, the success of expanded UI benefits may have depended on the specific hardships households faced among those eligible to receive them (see also Ganong et al., 2020).

Research Questions

Using Heflin's (2016) multidimensional understanding of material hardship, our first research question is as follows: which pandemic-related disruptions were associated with food and bill-paying hardships, respectively?

Conceiving of these hardships as distinct experiences, our second research question is as follows: did those experiencing food or bill-paying hardship use distinct strategies to exit hardship?

Data and Methods

Our data came from the Ypsilanti COVID-19 Study, a cross-sectional needs assessment of residents taken in the summer of 2020. A local human service organization spearheaded the project, which eventually came to include the Washtenaw County Racial Equity Office, and faculty of a research university in the area. The human service organization provided direct service to residents of the Ypsilanti Housing Commission, the city's public housing authority. The organization had a strong desire to know the prevalence of COVID-19 among residents and additional services they may need at a time when the city lacked a COVID-19 testing center. Members of the partnership collaborated on the survey instrument and considered many ways to measure not only the presence of COVID-19, but its impact on individuals and families. The language for many of the survey items was taken from the Detroit Metro Areas Communities Study, which was concurrently fielding a rapid-response survey to Detroit area residents on similar topics. The involvement of the Washtenaw County Racial Equity Office was particularly valuable in crafting items that spoke to racial disparities in the ability to work from home, knowledge of individuals with COVID-19, attitudes toward the (eventual) vaccines, as well as the responsiveness of elected officials to the pandemic. In the immediate aftermath of George Floyd's murder, the partnership also included survey items on attitudes toward law enforcement. Because no identifying information of respondents was collected, the survey instrument and data collection procedures were deemed exempt by the institutional review board of the participating university.

The survey instrument was administered through Qualtrics. To make it as accessible to as many residents as possible, the research partnership created a Spanish-language version of the instrument that respondents could elect to answer.

Respondents to the survey were a non-probability sample of Ypsilanti residents. The research partnership met with representatives of several non-profit organizations serving the Ypsilanti community, who agreed to email an invitation to participate in the study to their respective listservs. Residents of the Ypsilanti Housing Commission also received an email invitation to participate. In adherence to equitable research practice, respondents received a $20 incentive for completing the survey.

Data collection occurred between June 12 and August 21, 2020. A total of 676 surveys were started. Of these, there were 609 usable responses. There were approximately 1,000 Ypsilanti Housing Commission residents during the period of data collection. We received 131 responses from individuals in this group, for a response rate of 13.1%. The response rate for the rest of the sample is harder to calculate because the research team was unaware of the number of potential respondents on the various non-profit listservs that emailed invitations. The average age of respondents in the entire sample was 37.7 (SD 11.1). The sample was 74.3% female, 51.8% White, 33.4% Black, 11.6% Latinx, and 56.7% of respondents had household incomes below $40,000 in 2019. The characteristics of the sample over fit for race and income compared to the Ypsilanti population in general, which in 2020 was 26.5% Black and 6.0% Latinx, respectively, with a median household income of $40,028 (U.S. Census Bureau, 2020).

Pandemic-Related Disruptions

Heflin (2016) identifies disruptions in employment and income, household composition and residence, and health as potential contributors to a multidimensional understanding of material hardship. The COVID-19 pandemic touched each of these forms of disruption, and each was a focus of the survey instrument.

Housing Disruptions

One item was used to indicate disruptions to housing circumstances and household composition. It read, "Since the COVID-19 pandemic began in the U.S. (around March 1, 2020), have any of the following changes taken place in your living arrangements (select all that apply)?" Answer choices included (1) I moved to a new place to live, (2) someone moved into my household, (3) someone moved out of my household, (4) no changes. Each of these answer choices was dichotomized as unique indicators of housing disruptions related to COVID-19.

Health Disruptions

Three items were used to indicate disruptions to health. The first asked respondents if they had been tested for COVID-19. Testing at the time of data collection was not easily accessible in Ypsilanti, so individuals to be tested were most likely experiencing COVID-related symptoms. The second asked respondents if a friend or family member had COVID-19. The third asked respondents if they knew someone who died from COVID-19. These two questions indicated some degree of exposure to COVID that may have impacted the individual enough to change their behavior.

Financial Disruptions

Three items were used to indicate disruptions to household finances. The first asked respondents to indicate their current employment status. Their answer choices were (1) I am

still working in the same job I had before the COVID-19 pandemic, (2) I lost my job and am looking for work, (3) I have been temporarily laid off from the job I had before the COVID-19 pandemic, (4) I am on sick leave or other leave from the job I had before the COVID-19 pandemic, (5) I am now working at a different job than I had before the COVID-19 pandemic, (6) other. Our analysis dichotomized those who had lost their job and were looking for work, and all other respondents. The second item asked respondents, "Has the COVID-19 pandemic affected how you are spending money?" Respondents could answer (1) Yes, I have been spending a lot more money, (2) Yes, I have been spending a little more money, (3) Yes, I have been spending a little less money, (4) Yes, I have been spending a lot less money, or (5) No, I have not changed the amount I spend. Our analysis dichotomized those who indicated their spending increased a little or a lot, and all other respondents. The third item was identical to the second, except that it asked about borrowing. Similarly, our analysis dichotomized those who indicated their borrowing had increased a little or a lot, and all other respondents.

Bill-Paying Hardship

One item was used to identify bill-paying hardship modeled after Heflin et al. (2009). It reads, "Since March 1, 2020, have you been late paying for any of the following (select all that apply)." Answer choices included (1) mortgage or rent, (2) loans (e.g. student loans, car loan), (3) credit card, (4) utility or water bill, (5) phone, internet, cable, (6) I have not been late with any payments. We recorded respondents who chose mortgage or rent or utility or water bill as experiencing utility hardship so that our analysis would be consistent with previous research on material hardship, and because rent and utilities were qualitatively more important to respondents than the other answer choices.

Food Hardship

Two items were used to identify hardships related to food insecurity. The first asked respondents, "In the past seven days, were you worried you would run out of food because of a lack of money or other resources?" The second asked respondents, "In the past seven days, did you eat less than you thought you should because of a lack of money or other resources?" For both questions, respondents could answer yes, no, or don't know. Respondents were identified as experiencing food hardship if they answered yes to either question. This approach differs from Heflin and Butler (2012) who consider the volume of food consumed over the last 12 months. Framing food hardship consistently with Heflin and Butler, as well as Heflin et al. (2009), would obfuscate

the pandemic's potential impact on food insecurity in the short term.

Exit Strategies

Despite being a cross-sectional survey, data collection for the Ypsilanti COVID-19 Study occurred at such a time (June–August 2020) that respondents could reasonably be expected to (1) accurately recall their circumstances before the pandemic (around March 1, 2020), as well as to (2) be aware of and utilize pandemic-related programs passed under the CARES Act such as the Economic Impact Payments and the Pandemic Unemployment Compensation.

Social Program Participation

Heflin et al. (2011) conceive of social programs such as those passed under the CARES Act as potential exit strategies from hardship. One item was used to indicate social program participation as an exit strategy from material hardship. It reads, "Since March 1, 2020, have you received any of the following forms of public assistance or emergency safety net services (select all that apply)?" Respondents had 11 answers choices, among which were SNAP or Food Stamps, and Unemployment Insurance (UI) benefits. Each of these was dichotomized to indicate their participation since the start of the pandemic.

Individual Strategies

Heflin et al. (2011) also recognized idiosyncratic strategies to exit material hardship that need to be accounted for in relation to social program participation. One item was used to indicate individual strategies to exit material hardship. It reads, "Since the start of the pandemic (around March 1, 2020), have you been paid for any of the following activities (select all that apply)?" There were 7 answer choices available to respondents. Our analysis considers three: (1) child or elder care services, (2) housecleaning, and (3) driving or ride-sharing such as Uber or Lyft. Each of these was dichotomized to indicate their use since the start of the pandemic.

Table 1 shares the characteristics of respondents to the Ypsilanti COVID-19 Study.

The analysis strategy for Research Question 1 followed from Heflin and Butler (2012):

$$\log\left(\frac{h}{1-h}\right)_i = \beta_0 + \beta_1 HSD_i + \beta_2 HLTH_i + \beta_3 FIN_i + \beta_4 X_i + e_i$$

where $\log\left(\frac{h}{1-h}\right)_i$ is the likelihood of experiencing material hardship (late paying rent, late paying utilities, eating less, or worrying about food) for individual i; HSD_i is a vector of variables capturing housing disruptions (i.e. moved to new

Table 1 Sample characteristics ($N = 609$)

Baseline characteristic	%
Ypsilanti Housing Commission resident	26.1
Disruptions to housing circumstances	
Moved to new residence	8.0
Another person moved in	5.7
Another person moved out	4.6
Disruptions to health	
Tested for COVID-19	31.7
Friend or family member had COVID-19	39.9
Know someone who died from COVID-19	18.5
Disruptions to household finances	
Lost job since COVID-19	25.9
Spending increased since COVID-19	41.7
Borrowing increased since COVID-19	23.3
Demographics	
Female	74.3
White	51.8
Black	33.4
Latinx	11.6
All other races	3.2
Can afford $400 unexpected expense	56.3
Rent current residence	57.3
Any children in the household	69.3
Household income in 2019	
$0–$9,999	13.7
$10,000–$19,999	12.2
$20,000–$29,999	13.8
$30,000–$39,999	17.0
$40,000–$49,999	12.7
$50,000–$74,999	14.6
$75,000 or more	16.3
Overall health	
Excellent	15.4
Very good	45.2
Average	28.4
Fair	8.4
Poor	2.6
Type of hardship	
No hardship	49.4
Bill-paying and food	23.6
Bill-paying only	12.8
Food only	14.1
Bill-paying hardship indicators	
Late paying rent since COVID-19	21.2
Late paying utilities since COVID-19	26.8
Food hardship indicators	
Did you eat less last 7 days to save food?	30.9
Worried food will run out last seven days?	30.5
Hardship exit strategies	
Applied for SNAP benefits	38.7
Applied for UI benefits	23.3
Earned money for childcare since COVID	7.7
Earned money for housecleaning since COVID	8.7
Earned money for ridesharing since COVID	7.1

Table 1 (continued)

The average age of the sample was 37.7, with a standard deviation of 11.1

residence since COVID, another person moved in since COVID, another person moved out since COVID); $HLTH_i$ is a vector of variables capturing disruptions to health (i.e. tested for COVID, friend or family member had COVID, and know someone who died from COVID); FIN_i is a vector of variables capturing disruptions to financial circumstances (i.e. lost job since COVID, spending since COVID, and borrowing since COVID), and X_i is a vector of demographic variables (i.e. housing income, rent current residence, can afford a $400 unexpected expense, age, race, any children in the household, and overall health).

For Research Question 2 we modeled five different methods for exiting material hardship, conditional on experiencing hardship in the first set of models:

$$\log\left(\frac{y}{1-y}\right)_i = \beta_0 + \beta_1 H_i + \beta_2 HSD_i + \beta_3 HLTH_i + \beta_4 FIN_i + \beta_5 X_i + e_i$$

where $\log\left(\frac{y}{1-y}\right)_i$ is the likelihood of attempting one of the five exit strategies considered— applying for SNAP or UI, and three different ways of earning extra money—and H_i is a vector of variables related to the type of hardship experienced.

Results

Pandemic-Related Disruptions and Material Hardship

Table 2 shows the relationship of pandemic-related disruptions to bill-paying and food hardship, respectively. Of the various disruptions COVID-19 put households through, disruptions to household finances had the most consistent relationship to both bill-paying and food hardships. The loss of one's job since the start of the COVID-19 pandemic, for example, significantly increased the likelihood of being late with rent ($\beta = 1.055$, $p < 0.000$), being late with utilities ($\beta = 0.651$, $p < 0.007$), eating less over the last 7 days ($\beta = 0.753$, $p < 0.001$), and worrying you might run out of food ($\beta = 0.618$, $p < 0.014$), controlling for all other disruptions and demographic characteristics. This finding was consistent with research from the early months of the pandemic (Despard et al., 2020; Karpman & Zuckerman, 2021), but with the benefit of controlling for additional forms of disruption.

Table 2 Logistic regression results for pandemic-related disruptions on food and bill-paying hardships

Variable	Late paying rent			Late paying utilities			Eat less last 7 days			Worried about food		
	β	SE	p	β	SE	p	β	SE	p	β	SE	p
Disruptions to housing circumstances												
Moved to new residence since COVID	0.082	0.412	0.842	0.069	0.389	0.859	0.362	0.383	0.345	− .557	0.419	0.184
Another person moved in since COVID	− .408	0.533	0.444	− 1.31	0.612	**0.032**	− .688	0.547	0.208	− .298	− .531	0.574
Another person moved out since COVID	− 1.58	0.784	**0.044**	0.176	0.497	0.723	− .063	0.488	0.897	− .381	0.528	0.470
Disruptions to health												
Tested for COVID	0.546	0.275	**0.047**	− .085	0.264	0.748	0.161	0.258	0.533	0.934	0.261	**0.000**
Friend or family member had COVID	0.277	0.272	0.307	0.184	0.259	0.476	− .196	0.249	0.432	0.191	0.262	0.468
Know someone who died from COVID	0.125	0.312	0.689	0.105	0.299	0.726	− .225	0.308	0.467	− .305	0.310	0.325
Disruptions to household finances												
Lost job since COVID	1.055	0.254	**0.000**	0.651	0.242	**0.007**	0.753	0.236	**0.001**	0.618	0.251	**0.014**
Spending since COVID	0.211	0.092	**0.021**	0.282	0.084	**0.001**	0.143	0.082	0.082	0.285	0.086	**0.001**
Borrowing since COVID	0.277	0.121	**0.022**	0.032	0.112	0.776	0.182	0.113	0.107	0.351	0.119	**0.003**
Demographics												
Household income	0.076	0.086	0.374	− .186	0.079	**0.018**	− .250	0.078	**0.001**	− .181	0.081	**0.025**
Rent current residence	0.670	0.324	**0.039**	0.101	0.293	0.731	0.224	0.289	0.438	0.532	0.306	0.083
Can afford a $400 unexpected expense	0.261	0.282	0.355	− .215	0.255	0.399	0.109	0.255	0.668	− .048	0.266	0.857
Age	0.011	0.012	0.362	0.012	0.012	0.304	− .002	0.011	0.845	0.010	0.012	0.411
Black	0.802	0.307	**0.009**	0.643	0.274	**0.019**	− .304	0.279	0.276	0.269	0.286	0.347
Latinx	1.236	0.375	**0.001**	0.965	0.356	**0.007**	1.513	0.348	**0.000**	1.759	0.368	**0.000**
All other races	0.452	0.712	0.526	− 1.62	1.066	0.129	− .564	0.697	0.418	0.051	0.657	0.938
Any children in the household	0.235	0.318	0.459	1.314	0.321	**0.000**	0.704	0.281	**0.012**	1.011	0.312	**0.001**
Overall health	− .106	0.146	0.468	0.025	0.134	0.851	0.261	0.129	**0.043**	− .054	0.138	0.695
N	521			521			515			514		

Bold values indicate $p < .05$

Pandemic-related increases in spending was also related to food and bill-paying hardship. It significantly increased the likelihood of being late with rent ($\beta = 0.211$, $p < 0.021$), being late with utilities ($\beta = 0.282$, $p < 0.001$), and worrying you might run out of food ($\beta = 0.285$, $p < 0.001$), controlling for other factors, including the loss of one's job. This finding was consistent with Elliott and colleague's (2021) sample of mothers and grandmothers in North Carolina, and suggests the pandemic interfered with established spending patterns in ways that adversely affected both bills and food.

Our last measure of disruptions in household finances concerned increased borrowing. It similarly cut across food and bill-paying hardship. Pandemic-related increases in borrowing significantly increased the likelihood of being late with rent ($\beta = 0.277$, $p < 0.022$) and worrying you might run out of food ($\beta = 0.351$, $p < 0.003$), controlling for other factors. That increased borrowing should touch both bill-paying and food hardship may suggest these individuals were in more dire circumstances than other respondents. With increased borrowing comes increased debt, which may have been a measure of last resort after having already been late with rent and worrying you might run out of food.

In contrast to disruptions in household finance, disruptions in housing circumstances decreased the likelihood of experiencing bill-paying hardship. For example, having another individual in the household move out significantly decreased ($\beta = − 1.58$, $p < 0.044$) the likelihood of being late with rent, controlling for other factors. Having an individual move into the household significantly decreased ($\beta = − 1.31$, $p < 0.032$) the likelihood of being late with utilities. Heflin (2016) found that the fluidity of household composition had different effects on hardship, and "may be a strategy that low-income households use in varying ways to meet competing demands" (p. 369).

Finally, we considered disruptions to health related to COVID-19. Of our three indicators, only testing for COVID-19 showed a relationship to material hardship. It was associated with an increased likelihood of being late with rent ($\beta = 0.546$, $p < 0.047$), and worrying food will run out ($\beta = 0.934$, $p < 0.000$), controlling for other factors. Our other measures of health disruptions were admittedly indirect, so it was understandable these did not show a relationship to material hardship. Testing's relationship to material hardship may suggest these individuals were genuinely sick, or that their

circumstances required them to go out more because they had less ability to stay at home and wait out the pandemic.

Importantly, certain demographic characteristics that were constant throughout the pandemic showed strong associations with food and bill-paying hardship, controlling for changes in circumstances. For example, higher household incomes in 2019 significantly decreased the likelihood of being late with utilities ($\beta = -0.186$, $p < 0.018$), eating less over the last 7 days ($\beta = -0.250$, $p < 0.001$), and worrying food will run out ($\beta = -0.181$, $p < 0.025$), controlling for other factors. Race was also predictive of material hardship entry. Black respondents were associated with an increased likelihood of being late with rent ($\beta = 0.802$, $p < 0.009$) and being late with utilities ($\beta = 0.643$, $p < 0.019$), controlling for other factors. Latinx respondents were associated with an increased likelihood of being late with rent ($\beta = 1.236$, $p < 0.001$), being late with utilities ($\beta = 0.965$, < 0.007), eating less over the last 7 days ($\beta = 1.513$, $p < 0.000$), and worrying food will run out ($\beta = 1.011$, $p < 0.001$). These findings were consistent with Karpman et al. (2020), who found Latino households to be the most disadvantaged early in the pandemic. Lastly, it should be noted that having children was also a source of bill-paying and food hardship. Having children was associated with an increased likelihood of being late with utilities ($\beta = 1.314$, $p < 0.000$), eating less over the last 7 days ($\beta = 0.704$, $p < 0.012$), and worrying food will run out ($\beta = 1.011$, $p < 0.001$), controlling for other factors. These results were consistent with prior research from the early months of the pandemic (Elliott et al., 2021; Gupta et al., 2020; Keith-Jennings et al., 2021; Monte, 2020; Schanzenbach & Pitts, 2020) and spoke to the challenges families with children faced at this time.

Hardship and Exit Strategies

Table 3 shows the results of our models of exit strategies from material hardship. There was very little to suggest from our sample of Ypsilanti residents that the type of hardship faced in the early months of the pandemic was predictive of an individual's exit strategy. Indeed, bill-paying hardship significantly decreased ($\beta = -1.68$, $p < 0.045$) the likelihood of earning money from Uber or Lyft. Food hardship was not predictive of any exit strategy. Heflin and Butler (2012) similarly found difficulty predicting exit strategies based on the type of hardship faced. They speculate that households experiencing food hardship alone were unlikely to recover due to poor household functioning. Heflin (2016) further found that once a disruption occurs, households often "lack resilience and have difficulty regaining equilibrium" (p. 370). In the early months of the pandemic, the lack of a clear pathway out of hardship once it was experienced suggested the Economic Impact Payments and the expanded UI benefits under

the CARES Act did not address the issues that triggered the hardship in the first place (Heflin & Butler, 2012).

Disruptions in housing circumstances were associated with multiple strategies to exit material hardship, although in conflicting ways. For example, moving to a new residence ($\beta = -1.74$, $p < 0.001$) and having an individual move out of the household significantly decreased ($\beta = -1.80$, $p < 0.038$) the likelihood of receiving SNAP. On the other hand, those same disruptions were associated with an increased likelihood of earning money from childcare ($\beta = 1.88$, $p < 0.001$ for moving to a new residence, $\beta = 2.14$, $p < 0.033$ for an individual moving out of the household). Also, moving to a new residence was also associated with an increased likelihood of earning money from housekeeping ($\beta = 1.29$, $p < 0.044$). These results may be an indication that for the respondents in our sample who experienced disruptions in housing circumstances, these disruptions may have been conditional on their performing these additional tasks for pay, perhaps at a relative or friend's residence.

Disruptions in household finances were not predictive of receiving SNAP benefits. It may be that a substantial number of our Ypsilanti Housing Commission respondents were already receiving SNAP prior to the onset of the pandemic and elected not to answer that item affirmatively on the survey instrument. This would be consistent with Parolin (2021). Increased spending was associated with an increased likelihood ($\beta = 0.437$, $p < 0.027$) of earning money from childcare. Table 3 also showed that losing one's job did significantly increase the likelihood of receiving UI ($\beta = 2.13$, $p < 0.000$) for the respondents in our sample.

Our results showed that the likelihood of receiving UI since the start of the pandemic significantly increased ($\beta = 0.298$, $p < 0.028$) as household income increased, controlling for other factors. This was consistent with research from early in the pandemic that the expanded UI benefits were less accessible to low-income individuals who had lost jobs (Han et al., 2020; Moffitt & Ziliak, 2020). The opposite relationship was found for SNAP. There, the likelihood of receiving SNAP significantly decreased ($\beta = -0.237$, $p < 0.047$) as household income increased. Black respondents were also significantly more likely ($\beta = 0.879$, $p < 0.021$) to receive SNAP since March 1, 2020, as were Latinx respondents ($\beta = 2.24$, $p < 0.000$), and respondents with children ($\beta = 2.01$, $p < 0.000$), controlling for other factors. These findings were all consistent with research that found SNAP to be the most responsive safety net program during the pandemic (Hembre, 2020; Moffitt & Ziliak, 2020).

Table 3 Logistic regression results on strategies to exit material hardship

Variable	Applied for SNAP			Applied for UI			Childcare			Housecleaning			Uber/Lyft		
	β	SE	p	β	SE	p	β	SE	p	β	SE	p	β	SE	p
Type of hardship															
Bill-paying only	− .641	.391	.101	.542	.405	.181	.443	.601	.461	− .622	.609	.307	− 1.68	.841	**.045**
Food only	− .550	.389	.158	− .341	.470	.468	.975	.595	.102	− .139	.544	.799	− .157	.520	.762
Disruptions to housing circumstances															
Moved to new residence since COVID	− 1.74	.514	**.001**	.047	.564	.934	1.88	.575	**.001**	1.29	.642	**.044**	.368	.703	.601
Another person moved in since COVID	− 1.33	.730	.068	− .502	.777	.518	1.23	.908	.175	.738	.841	.380	.311	.877	.722
Another person moved out since COVID	− 1.80	.870	**.038**	− 2.10	1.19	.077	2.14	1.00	**.033**	1.07	1.05	.309	1.43	.966	.139
Disruptions to health															
Tested for COVID	− .752	.364	**.039**	− .532	.392	.175	.952	.522	.068	.405	.496	.414	.034	.558	.951
Friend or family member had COVID	.211	.346	.540	.417	.375	.266	− .889	.533	.095	− .299	.514	.560	− 1.78	.633	**.005**
Know someone who died from COVID	.688	.436	.114	− .200	.436	.646	.956	.522	.068	− .894	.649	.169	.592	.636	.352
Disruptions to household finances															
Lost job since COVID	− .527	.335	.116	2.13	.381	**.000**	− .012	.494	.979	.882	.464	.057	.335	.459	.465
Spending since COVID	.016	.113	.884	− .030	.122	.803	.437	.198	**.027**	.264	.173	.127	.278	.186	.136
Borrowing since COVID	.108	.138	.436	.034	.149	.816	.103	.195	.597	− .295	.193	.126	− .028	.202	.890
Demographics															
Household income	− .237	.119	**.047**	.298	.135	**.028**	.258	.188	.169	.424	.191	**.027**	.311	.192	.106
Rent current residence	.361	.407	.375	− .574	.461	.213	.725	.662	.274	.304	.583	.602	.415	.526	.430
Can afford a $400 unexpected expense	− .349	.343	.309	− .456	.398	.252	− .898	.527	.088	1.44	.577	**.013**	1.16	.544	**.032**
Age	− .023	.019	.214	− .036	.021	.088	.024	.029	.411	.024	.034	.469	.052	.031	.096
Black	.879	.380	**.021**	.967	.447	**.031**	− .519	.607	.392	.366	.583	.530	.295	.644	.647
Latinx	2.24	.510	**.000**	.254	.562	.651	− .565	.749	.450	− .962	.690	.164	1.75	.657	**.008**
All other races	.320	1.02	.754	.709	1.29	.585	–	–	–	–	–	–	1.56	1.44	.279
Any children in the household	2.01	.496	**.000**	− .766	.454	.092	1.21	.906	.181	1.28	.915	.161	1.05	.924	.255
Overall health	.129	.189	.495	− .067	.222	.760	− .326	.308	.289	− .468	.319	.143	.522	.296	.078
N	262			262			257			257			262		

Bold values indicate p < .05

Discussion

The notion of pandemic amnesty has been floated to absolve policymakers of all the things unknown at the onset of COVID-19 in order to render a constructive conversation on how to plan for future pandemics (Oster, 2022). Among the unknowns in the early months of the pandemic was the necessity of masking. A similar unknown was what to do for all the workers required to stay home in the spring of 2020 so that we could "flatten the curve". Among the policies to emerge out of this period were the Economic Impact Payments and the Pandemic Unemployment Compensation program. These have been heralded as having prevented a massive increase in poverty (Cooney & Shaefer, 2021; Ganong et al., 2020; Karpman & Zuckerman, 2021). The spirit of pandemic amnesty should extend not only to these programs in particular, but also to the consensus regarding their effectiveness at preventing poverty.

In absolute terms the pandemic response may have prevented poverty, but in this study, we have considered how poverty as an absolute measure was inadequate for understanding the impact pandemic-related disruptions had on vulnerable households. We should rather view pandemic-related disruptions in early 2020 through the prism of material hardship, which refers to a household's ability to meet basic expenses such as rent, utilities, food, and medical care (Heflin et al., 2009). Viewed from this perspective, there is consensus that the pandemic itself was quite harmful to low-income households, households of color, and families with children (see Gupta et al., 2020; Karpman & Zuckerman, 2021; Schanzenbach & Pitts, 2020). Our study went further than previous considerations of pandemic-related material hardship by showing which disruptions were associated with bill-paying and/or food hardship. We then conceptualized variation in how these hardships were experienced to explore their relationship to strategies to exit hardship.

We found many insights that were unknown to policymakers at the onset of the pandemic. For example, disruptions to household finances, particularly through job loss, cut across bill-paying and food hardships, controlling for other forms of pandemic-related disruption. And yet once a household experienced either bill-paying or food hardship, there was no clear path out of the hardship through SNAP or UI. Along the same lines, we found that among those experiencing hardship—bill-paying, food, or both—income was predictive of UI. In other words, those most likely to benefit from the extraordinary generosity of the Pandemic Unemployment Compensation program were less likely to access it, such as low-income households behind on their rent or worried their food might run out (see also Ganong et al., 2020). In the future, pandemic response should prioritize preventing disruptions to household finances, perhaps through an American version of the U.K.'s Coronavirus Job Retention Scheme, in which the central government subsidized the cost to furlough workers at home rather than lay them off entirely (Brewer & Tasseva, 2021). In the U.S., laying workers off and then making UI more generous was not an effective method for pulling the most vulnerable out of pandemic-related material hardship (see also Moffitt & Ziliak, 2020).

Finally, the disproportionate impact of pandemic-related disruptions to households of color and families with children was unknown to policymakers in the spring of 2020, although Parolin (2021) persuasively argues this should not have been the case. We found that controlling for pandemic-related disruptions, households of color were more likely to experience bill-paying and food hardship in the early months of the pandemic than White households in our sample. In addition, we found that households with children were more likely to experience bill-paying and food hardship. COVID-19 was not, as others have noted, an equal opportunity disruptor (O'Reilly, 2020). In comparison to UI, the importance of SNAP may have been unknown to policymakers in the spring of 2020. As others have noted (Elliott et al., 2021), SNAP was the clear strategy out of hardship for households with children in our sample, more so than the expanded UI benefits.

Limitations

The Ypsilanti COVID-19 Study was a non-probability sample of residents of one municipality, at one point in time in the summer of 2020. Although the sample was over representative of people of color and low-income individuals in Ypsilanti, it was not generalizable to the city as a whole, nor to the United States. Nevertheless, many of the descriptive statistics in the Ypsilanti COVID-19 Study mirrored those of nationally representative studies fielded around the same time, particularly concerning disruptions to households of color and families with children (Despard et al., 2020; Karpman et al., 2020). These similarities added concurrent validity to the Ypsilanti COVID-19 Study.

The indicators of health disruptions used in this study were indirect and showed little relationship to food or bill-paying hardship. It may be that more direct indicators of pandemic-related health complications will show significant relationships to multiple dimensions of material hardship.

Finally, this study was making inferences on the relationships between pandemic-related disruptions and multiple dimensions of material hardship while simultaneously

measuring the relationships between material hardship and strategies to exit hardship. Conceptually, this analytic strategy may be more appropriately applied to a panel study than a cross-sectional one like the Ypsilanti COVID-19 Study. However, the rapidly evolving nature of the pandemic response argued in favor of our data. The Pandemic Unemployment Compensation program expired at the end of July 2020. Fielding a panel study to capture in one instance the impact of COVID disruptions, then fielding another panel to capture the impact of the pandemic response was impractical. We were fortunate that our period of data collection allowed for the accurate recall of respondents when programs passed under the CARES Act were still in operation.

Conclusion and Implications

Although three years removed from spring 2020, it is important to remember that the COVID-19 pandemic created profound disruptions to already vulnerable individuals and families with children. These disruptions impacted their ability to pay their bills and provide food for the households. These are properly understood as distinct hardships that can be glossed over when the pandemic response is viewed from the perspective of poverty. In absolute terms the pandemic response helped families avoid poverty, but pandemic-related disruptions such as jobs loss did throw them into hardship. And once faced with hardship, it is not clear the pandemic response provided pathways for families out of hardship.

In the future, a viral pandemic is not the only disruption imaginable to vulnerable families with children. In reality many things can cause a disruption such as a plant closure, or a water crisis as with Flint, Michigan, or Jackson, Mississippi, or an unexpected medical emergency. As Parolin (2021) observes, many of our most vulnerable families live on a knife's edge avoiding hardship when a disruption can hit of unknown duration. Poverty as an absolute measure will fail to capture the nuance of a household's experience with disruptions and provide policymakers accurate information as to the disruption's impact. Our findings suggest when disruptions hit, policymakers should focus on preventing job loss. This priority is likely to limit bill-paying and food hardships that follow in the immediate aftermath of the disruption. The alternative, allowing job loss to occur and using the UI system to make families whole, is not an effective way of pulling households out of hardship once it hits.

Declarations

Compliance with Ethical Standards This study was provided IRB exemption from the University of Michigan. Although it did involve research on human subjects, no identifying information was collected, and the incentive participants received for completing the survey instrument–$20—was not coercive. Participants were informed prior to consenting to participate that information provided would be used for research purposes, as well as information to contact the study team with questions.

Conflict of interest The study team has no conflicts of interest to disclose.

References

Brewer, M., & Tasseva, I. V. (2021). Did the UK policy response to Covid-19 protect household incomes? *The Journal of Economic Inequality, 19*, 433–458. https://doi.org/10.1007/s10888-021-09491-w

Cooney, P., & Shaefer, H. L. (2021). *Material hardship and mental health following the COVID-19 relief bill and American rescue plan act.* Poverty Solutions. University of Michigan. Retrieved December 28, 2022, from http://poverty.umich.edu/publications/material-hardship-and-mental-health-following-the-covid-19-relief-bill-and-american-rescue-plan-act/

Despard, M., Grinstein-Weiss, M., Chun, Y., & Roll, S. (2020). *COVID-19 job and income loss leading to more hunger and financial hardship.* Brookings Institution. Retrieved December 28, 2022, from http://brookings.edu/blog/up-front/2020/07/13/covid-19-job-and-income-loss-leading-to-more-hunger-and-financial-hardship/

Elliott, S., Satterfield, S. J., Solorzano, G., Bowen, S., Hardison-Moody, A., & Williams, L. (2021). Disenfranchised: How lower income mothers navigated the social safety net during the COVID-19 pandemic. *Socius, 7.* https://doi.org/10.1177/23780231211031690

Farrell, D., Ganong, P., Greig, F., Liebeskind, M., Noel, P., & Vavra, J. (2020). *Consumption effects of unemployment insurance during the COVID-19 pandemic.* JP Morgan Chase & Co. Institute. Retrieved December 28, 2022, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3654274

Ford School. (n.d.) *Detroit metro area communities study.* University of Michigan. Retrieved December 28, 2022, from http://fordschool.umich.edu/research-centers-departments/detroit-metro-area-communities-study

Ganong, P., Noel, P., & Vavra, J. (2020). U.S. unemployment replacement rates during the pandemic. *Journal of Public Economics, 191*, 1–12. https://doi.org/10.1016/j.jpubeco.2020.104273

Gupta, P., Gonzalez, D., & Waxman, E. (2020). *Forty percent of Black and Hispanic parents of school-age children are food insecure.* Urban Institute. Retrieved December 28, 2022, from http://urban.org/research/publication/forty-percent-black-and-hispanic-parents-school-age-children-are-food-insecure

Han, J., Meyer, B., & Sullivan, J. (2020). *Income and poverty in the COVID-19 pandemic.* NBER Working Paper Series. Working Paper 27729. Retrieved December 28, 2022, from http://www.nber.org/papers/w27729

Heflin, C. (2016). Family instability and material hardship: Results from the 2008 Survey of Income and Program Participation. *Journal of Family and Economic Issues, 37*, 359–372. https://doi.org/10.1007/s10834-016-9503-6

Heflin, C. H., & Butler, J. S. (2012). Why do women enter and exit from material hardship? *Journal of Family Issues, 34*(5), 631–660. https://doi.org/10.1177/0192513X12442822

Heflin, C., London, A. S., & Scott, E. K. (2011). Mitigating material hardship: The strategies low-income families employ to reduce the consequences of poverty. *Sociological Inquiry, 81*(2), 223–246. https://doi.org/10.1111/j.1475-682X.2011.00369.x

Heflin, C., Sandberg, J., & Rafail, P. (2009). The structure of material hardship in U.S. households: An examination of the coherence behind common measures of well-being. *Social Problems, 56*(4), 746–764. https://doi.org/10.1525/sp.2009.56.4.746

Hembre, E. (2020). *Examining the social safety net response to the COVID-19 pandemic*. Department of Economics, University of Illinois-Chicago. Retrieved December 28, 2022, from https://ssc.wisc.edu/~hembre/wp-content/uploads/2020/09/TANF_COVID.pdf

Karpman, M., & Zuckerman, S. (2021). *Average decline in material hardship during the pandemic conceals unequal circumstances*. Urban Institute. Retrieved from https://www.urban.org/sites/default/files/publication/104060/average-decline-in-material-hardship-during-thepandemic-conceals-unequal-circumstances_0.pdf

Karpman, M., Zuckerman, S., Gonzalez, D., & Kenney, G.M. (2020). *The COVID-19 pandemic is straining families' abilities to afford basic needs: Low-income and Hispanic families the hardest hit*. Urban Institute. Retrieved December 28, 2022, from http://urban.org/research/publication/covid-19-pandemic-straining-families-abilities-afford-basic-needs

Keith-Jennings, B., Nchako, C., & Llobrera, J. (2021). *Number of families struggling to afford food rose steeply in pandemic and remains high, especially among children and households of color*. Center for Budget and Policy Priorities. Retrieved December 28, 2022, from https://cbpp.org/research/food-assistance/number-of-families-struggling-to-afford-food-rose-steeply-in-pandemic-and

Moffitt, R. A., & Ziliak, J. P. (2020). COVID-19 and the U.S. safety net. *Fiscal Studies, 41*(3), 515–548. https://doi.org/10.1111/1475-5890.12243

Monte, L.M. (2020). *New census Household Pulse Survey shows households with children lost income, experienced food shortages during pandemic*. U.S. Census Bureau. Retrieved December 28, 2022, from http://census.gov/library/stories/2020/05/adults-in-households-with-children-more-likely-to-report-loss-in-employment-income-during-covid-19.html

O'Reilly, A. (2020). "Trying to Function in the Unfunctionable": Mothers and COVID-19. *Journal of the Motherhood Initiative for Research and Community Involvement, 11*(1). Retrieved from https://jarm.journals.yorku.ca/index.php/jarm/article/view/40588

Oster, E. (2022). Let's declare a pandemic amnesty. *The Atlantic*. Retrieved December 28, 2022, from http://theatlantic.com/ideas/archive/2022/10/covid-response-foregiveness/671879/

Parolin, Z. (2021). What the COVID-19 pandemic reveals about racial differences in child welfare and child well-being: An introduction to the special issue. *Race and Social Problems, 13*(1), 1–5. https://doi.org/10.1007/s12552-021-09319-2

Parolin, Z., Curran, M., Matsudaira, J., Waldfogel, J., & Wimer, C. (2020). *Monthly poverty rates in the United States during the COVID-19 pandemic*. Poverty and Social Policy Discussion Paper. Center on Poverty and Social Policy.

Schanzenbach, D.W. (2020). *Not enough to eat: COVID-19 deepens America's hunger crisis*. Food Research and Action Center Report. Retrieved December 28, 2022, from http://frac.org/wp-content/uploads/Not-Enough-to-Eat_Hunger-and-COVID.pdf

Schanzenbach, D.W., & Pitts, A. (2020). *How much has food insecurity risen? Evidence from the Census Household Pulse Survey*. Institute for Policy Research Rapid Research Report. Retrieved December 28, 2022, from https://www.ipr.northwestern.edu/documents/reports/ipr-rapid-research-reports-pulse-hh-data-10-june-2020.pdf

U.S. Census Bureau. (2020). *Social explorer tables: ACS 2020 (5-year estimates)*. socialexplorer.com. Retrieved December 28, 2022, from https://www.socialexplorer.com/tables/ACS2020_5yr/R13268806.