Physical Disability and Older Adults' Perceived Food and Economic Insecurity During the COVID-19 Pandemic

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ABSTRACT

Objectives. We examined whether older adults with physical disability were vulnerable to three types of perceived economic insecurity (difficulty paying regular bills, difficulty paying medical bills, income loss) and two types of perceived food insecurity (economic obstacles, logistical obstacles) during the early months of the COVID-19 pandemic. We evaluated the extent to which associations are moderated by three personal characteristics (age, sex, race/ethnicity) and two pandemic-specific risk factors (job loss, COVID-19 diagnosis).

Methods. Data are from a random 25 percent subsample of Health and Retirement Study (HRS) participants who completed a COVID-19 module introduced in June 2020. We estimated logistic regression models to predict each of five self-reported hardships during the pandemic.

Results. Bivariate analyses showed that persons with three or more functional limitations were more likely to report both types of food insecurity, and difficulty paying regular and medical bills since the start of the pandemic, relative to those with no limitations. After controlling for health conditions, effects were no longer significant for paying medical bills, and attenuated yet remained statistically significant for other outcomes. Patterns did not differ significantly on the basis of the moderator variables. Job loss substantially increased the risk of economic insecurity but not food insecurity.

Discussion. Older adults with more functional limitations were vulnerable to economic and food insecurity during the pandemic, potentially exacerbating the physical and emotional health threats imposed by COVID-19. Supports for older adults with disability should focus on logistical as well as financial support for ensuring their food security.

Keywords: disability, job insecurity, financial hardship, food insecurity, COVID-19

The COVID-19 pandemic has devastated the health, emotional well-being, and economic security of persons in the U.S. and worldwide. Adults ages 65+ have been particularly vulnerable to the virus, accounting for more than 80 percent of all COVID-related deaths in the U.S., although making up just 13 percent of the national population (Centers for Disease Control and Prevention, 2021). The economic impacts for older adults also have been substantial. Older adults' vulnerability to the virus, along with social distancing practices, have impeded their ability to work and hastened retirement (Li & Mutchler, 2020). Between January and September 2020, older workers experienced a substantial decrease in employment, with decreases most pronounced for those who already had relatively low earnings, such as personal care or service workers (Commonwealth Fund, 2020). Older adults also had new economic burdens, as they were called on to support younger family members, or as the economic supports they received from adult children diminished when the younger generation experienced job losses (Gilligan et al., 2020). Food insecurity also has increased; food insecurity is the lack of consistent access to enough food for an active, healthy life (U.S. Department of Agriculture, 2019). In April through June 2020, 14 percent of adults ages 60+ were food-insecure, a 60 percent increase from pre-pandemic levels (Ashbrook, 2020).

For older adults with physical disability, these hardships may be exacerbated. Physical disability refers to a physical condition that limits one's capacity to engage in activities in any domain of life, such as working for pay or grocery shopping (Verbrugge & Jette, 1994). Persons with disability have consistently lower rates of employment than their counterparts without disability (McMahon & Shaw, 2005), while those who are employed receive lower earnings and fewer benefits (Schur et al., 2009). They also are more vulnerable to layoffs and less likely to be rehired during economic downturns like the Great Recession of 2007-09 (Kaye, 2010). Working-

age adults with disability also have been especially vulnerable to food insecurity during the pandemic, due to both financial and physical barriers, including inability to or fear of going out to purchase food (Friedman, 2021).

However, we know of no population-based studies in the U.S. that have directly explored whether older adults with (versus without) disability are more likely to experience food and economic insecurity during the pandemic (for an exception in Canada, see Maroto et al., 2021). Older adults with disability may face financial obstacles, especially if they cannot work and are reliant on financial support from younger family members who have experienced job loss or other economic declines. Many meal delivery and congregate meal services targeting homebound older adults or those with disability paused during the early months of the pandemic (Flowers & Dean, 2021). Non-economic barriers including inability to or fear of going to the local grocery store, lack of access to or adeptness with food delivery apps, and difficulty traveling to multiple stores should one's local store have food shortages also may heighten food security for older adults with disability. Food insecurity is a serious risk factor for older adults' well-being, as it is linked with lower nutrient intake, and elevated risks of health conditions including diabetes, depression, high blood pressure, heart problems, gum disease, and asthma (Pooler et al., 2019). It also is a source of psychological distress for persons with disability, with effects distinct from other aspects of economic insecurity (Brown et al., 2020). Thus, using the nationally representative Health and Retirement Study (HRS), our first aim is to evaluate whether older adults with functional limitations are at risk of three types of economic insecurity (difficulty paying regular bills, difficulty paying medical bills, income loss) and two types of food insecurity (economic or logistical obstacles to food access) during the early months of the

COVID-19 pandemic. We consider the extent to which these associations are accounted for pandemic-related job loss.

The impacts of disability may vary based on one's other social characteristics. Emerging research takes an intersectional approach to understanding disability, documenting that its economic and interpersonal costs are intensified for historically disadvantaged subpopulations, most notably women, ethnic and racial minorities, and older persons (Brown & Moloney, 2019; Maroto et al., 2019). The impact of disability on pandemic-related hardship also may be compounded by other contextual factors, including a COVID-19 diagnosis and job loss; the accumulation of disadvantage may heighten one's financial needs and further undermine one's capacity to access the food and money necessary to support a healthy, active life (Settersten et al., 2020). Thus, we explore the extent to which the effects of disability on pandemic-related hardships are moderated by three personal characteristics (sex, race/ethnicity, and age) and two contextual risk factors (COVID diagnosis of self or coresidential kin; job loss). Our analyses also are adjusted for demographic, socioeconomic, and psychosocial factors that are well-documented correlates of disability and economic insecurity (e.g., Shandra, 2018). Documenting risk factors for economic and food insecurity during the pandemic and the factors that may intensify these risks is an important and policy-relevant goal, as these hardships may intensify long-standing economic and health disadvantages that have accumulated over the life course for persons with disability (Carr, 2019; Shandra, 2018; Wolfson et al., 2020).

METHODS

Data

Data are from the Health and Retirement Study (HRS), a nationally representative longitudinal survey of U.S. adults ages 51 and older carried out every two years. In 2020, a module on COVID-19 was administered to a 50% random subsample of households. One half of that subsample was released to fieldwork on June 11 and the second on September 24, 2020. Our analytic sample includes 3,191 persons from the June random subsample, comprising approximately 25% of the overall HRS sample (Health and Retirement Study, 2020). After excluding 25 cases missing on the hardship outcomes, our final analytic sample includes 3,166 individuals.

Measures

Dependent Variables

In the 2020 COVID module, HRS assessed whether a respondent experienced changes in work, spending, consumption and other activities "since the start of the coronavirus pandemic." Income change was assessed with the question "Since the start of the coronavirus pandemic, has your income gone up or down or stayed about the same because of the pandemic?" We constructed a dichotomous indicator for income went down (versus stayed the same or went up). Respondents also were asked to indicate whether they had "experienced any of the following: (a) missed any regular payments on rent or mortgage; credit cards or other debt; utilities or insurance; (b) could not pay medical bills; (c) didn't have enough money to buy food (i.e., income-driven food insecurity); and (d) had trouble buying food even though had money (i.e., logistics-driven food insecurity).

Focal Independent Variables

Our focus is whether functional limitation is associated with each hardship, and the extent to which these associations are accounted for by pandemic-related employment changes. Functional limitation refers to whether the respondent had any difficulty (yes/no) performing each of 11 tasks because of health problems: walking several blocks; walking across a room; climbing several flights of stairs without resting; getting up from a chair after sitting for long periods; stooping, kneeling, or crouching; pushing or pulling large objects like a living room chair; picking up a dime from a table; dressing; eating; bathing; and getting in and out of bed. We recoded the summed scores (range: 0 to 11) into three categories, based on the distribution of responses and prior analyses of the HRS data (e.g., Covinsky et al., 2009; Duchowny & Noppert, 2021; Tucker-Seeley et al., 2009): none (reference); one or two; or three or more limitations. We carried out sensitivity analyses using a continuous measure of the summed scores and a dichotomous measure indicating whether one had 3+ (versus 0 to 2) limitations. The multivariate results were generally similar, although model fit was superior using the three-category measure (results available from authors).

For the pandemic-related employment change variable, we created three mutually exclusive categories: not working prior to the pandemic (reference); employed throughout the pandemic (i.e., work not affected by the pandemic, lost job but found new job); and lost job in pandemic and did not find new work.

Covariates

Health covariates include self-rated health (range: 1 = poor; 5 = excellent), number of chronic health conditions (high blood pressure, diabetes, cancer, lung problems, heart problems, stroke, psychiatric problems, and arthritis, range: 0 to 8), depressive symptoms (range: 0 to 8) assessed using a subset of items from the Center for Epidemiologic Studies Depression scale (Radloff, 1977), and whether respondent or a household member has had COVID-19. Demographic controls include age (under age 65, 65 to 74, and 75+), sex, marital status, number of household members, and race/ethnicity. Socioeconomic characteristics include education, total household income, total household non-housing assets, and total household housing assets. To reduce skewness, we use the natural logarithm for the latter three measures.

Analytic Plan

We first compared the three functional limitation categories on all variables included in the analysis, using one-way analysis of variance (ANOVA) tests for continuous variables and chi-square tests for categorical variables. We estimated logistic regression models to predict each of the five outcomes. The baseline model presents unadjusted effects of functional limitations, and Model 2 incorporates pandemic-related employment changes. Models 3 and 4 adjust for demographic and socioeconomic characteristics (Model 3), and health conditions (Model 4) that may confound a statistically significant association between disability and the outcome measures. Finally, we evaluated whether the effects of functional limitation were moderated by age (< 65 vs. 65-74 vs. ≥ 75), sex, race/ethnicity (non-Hispanic Black vs. Hispanic vs. non-Hispanic other vs. non-Hispanic White), a COVID-19 diagnosis, and job loss (employed throughout the pandemic vs. lost job in pandemic and did not find new work vs. not working prior to the pandemic); we separately evaluated each two-way interaction term in the fully

adjusted models. Of 90 possible two-way interaction terms tested (nine moderator variable categories by two functional limitation categories and five outcomes), only one was statistically significant ($p < .05$). Due to multiple comparisons, it is plausible that the one significant interaction is attributable to chance (Brambor et al., 2006); thus, we present only our main effects analyses (full results available from authors).

RESULTS

Bivariate Analyses

Descriptive statistics for all study variables by disability status are presented in Table 1. ANOVA results comparing each of the three disability categories are presented in the far-right column. The results show a clear gradient in the perceived hardship outcomes; the proportion reporting each difficulty (except income drop) increases as the number of functional limitations increases. Older adults with 3+ functional limitations are roughly twice as likely as those with no limitations to report missing regular bill payments (12.5 vs. 7.2%), inability to pay medical bills (5.6 vs. 2.5%), income-driven food insecurity (10.4 vs. 4.6%), and logistics-driven food insecurity (21.2 vs. 11.2%). They also have a significantly higher rate of missing regular bill payments, and both income- and logistics-driven food insecurity relative to persons with 1-2 limitations. The three disability status categories also differ significantly with respect to employment changes. Persons with three or more functional limitations were least likely to experience job loss in pandemic, but most likely to report not working prior to the pandemic. They also were less likely to report income declines, relative to those with no limitations (14.3% vs. 19.4%), a difference which may reflect their relatively older age and receipt of a stable pension income.

[Table 1 about here]

Bivariate results are consistent with prior studies of disability, showing that persons in the most serious impairment category are significantly older, and have fewer socioeconomic resources including less education, household income, and wealth. They report significantly poorer self-rated health, more depressive symptoms, and more chronic health conditions. Just 3.1 percent of study participants reported that they or a coresidential household member were diagnosed with COVID-19, with similar rates across the three disability categories.

Multivariate Analyses

Logistic regression models are presented for difficulty paying regular and medical bills (Table 2), income declines (Table 3), and food insecurity (Table 4). We display the focal predictors only; full models are presented in the Appendix tables. The unadjusted model in Table 2 shows that persons with 3+ limitations are 1.8 times as likely as those with no impairments to report that they missed regular bill payments during the pandemic. The odds ratio increases slightly after controlling for pandemic-related economic changes, and declines yet remains statistically significant after adjusting all covariates (OR = 1.54, $p < .05$, in Model 4, Table 2). Similarly, persons with 1-2 and 3+ limitations are significantly more likely to report difficulty paying medical bills in the baseline model (OR = 1.88 and 2.25, respectively). These effects attenuate slightly after controlling for employment changes and sociodemographics in Model 3, yet are no longer statistically significant after adjusting for health covariates (OR = 1.62 and 1.02, n.s. in Model 4) at the $p < .05$ level. Persons in poorer health have significantly higher odds of difficulty paying medical bills; Appendix Table 1 reveals greater odds among those with a greater number of depressive symptoms (OR =1.12, $p < .01$), more comorbid chronic conditions

(OR = 1.18, $p < .05$), a COVID diagnosis in their household (OR = 2.11, $p < .05$), or poorer self-rated health (OR = 0.76, $p < .05$).

Table 3 shows that the likelihood of income drops *decreases* as the number of limitations increases, although these effects are no longer statistically significant after adjusting for sociodemographics, most notably age. Appendix Table 2 shows that age is inversely related to income declines; where persons ages 65-74 and 75+ are less likely than persons under age 65 to report such declines (OR = 0.73 and 0.43, respectively).

[Tables 2 and 3 about here]

Table 4 reveals that persons with impairments reported significantly greater odds of food insecurity during the pandemic, due both to financial and logistical obstacles. The baseline models show that persons with 3+ limitations are more than twice as likely as those with no impairments to report both that they could not afford food and that they faced logistical obstacles to procuring sufficient food. This disadvantage declines substantially after controlling for demographic and health characteristics, yet remains significant for logistics-driven food insecurity (OR = 1.52, $p < .01$). In the fully controlled model, persons with 1-2 limitations report significantly elevated odds of income-driven food insecurity (OR = 1.68, $p < .05$), although their greater odds of logistics-driven food insecurity are no longer statistically significant. Appendix Table 3 further reveals that Hispanics, persons living in larger households, and those with a greater number of depressive symptoms and comorbid health conditions are at significantly greater risk of logistics-driven food insecurity. By contrast, income-driven food insecurity is linked primarily to demographic and socioeconomic factors including race, sex, marital status, number of household members, education, non-housing wealth, and depressive symptoms but not physical health symptoms.

[Table 4 about here]

Persons who lost a job during the pandemic evidenced significantly higher odds of the three financial hardship outcomes, although we did not find comparable patterns for food insecurity. Relative to those who were not working at the start of the pandemic, workers who lost their jobs are more likely to have missed regular bill payments (OR = 3.04, $p < .001$, Table 2), difficulty paying medical bills (OR = 2.46, $p < .01$, Table 2), and income declines (OR = 10.67, $p < .001$, Table 3) in the fully adjusted models. The effect of job loss on either type of food insecurity was no longer statistically significant, net of sociodemographic and health factors (Table 4).

DISCUSSION

Our study is the first we know of to explore whether U.S. older adults with physical disability were particularly vulnerable to economic and food insecurity during the early months of the pandemic. Our analyses yielded three main findings. First, the bivariate analyses show that older adults with 3+ functional limitations were roughly twice as likely as those with no limitations to experience four of the five hardships, the exception being income loss. These differences were not accounted for by pandemic-related employment changes, partly because older adults with disabilities were less likely to work even before the pandemic started. Results also may reflect the efficacy of the Americans with Disabilities Act (ADA), which prohibits discrimination on the basis of disability in employment, including hiring and firing. Similar results were detected in Canada (Maroto et al., 2020), such that persons with disability were not especially vulnerable to job loss during the pandemic. However, employed workers did report concerns about losing their jobs in the future. Because our study was carried out during the initial months of the pandemic, it is plausible that some impacts were not yet felt.

The disparity in paying medical bills was no longer statistically significant after adjusting for the poorer physical and mental health reported by persons with disability. Two disparities – missing regular bill payments and logistics-related food insecurity – persisted after demographic, socioeconomic, and health characteristics were controlled. These results suggest that targeted interventions, including food delivery and assistance with paying monthly bills like utilities may be particularly effective in meeting the needs of older adults with disability, as well as those with depression and multimorbidities, during the pandemic.

Second, we found no evidence that the hardships experienced by older adults with disability differed on the basis of race, sex, age, a COVID diagnosis, or job loss. This is surprising, given an emerging literature on the cumulative disadvantage among persons with impairments (e.g., Brown & Moloney, 2019). However, each of these characteristics evidenced direct associations with at least some of the outcome measures, with Blacks, Hispanics, and persons under age 65 at particular risk. We suspect the non-significant moderation results may reflect statistical power, as relatively few HRS participants experienced each of the five hardships, with these proportions ranging from just 4% (medical bills) to 17% (income declines). We encourage future analyses, drawing on larger samples, to identify factors that may intensify the risks borne by older adults with impairments. Third, and unsurprisingly, we found that job loss had large and independent effects on each of the five outcomes, although the effect on the two food insecurity outcomes was no longer significant in the fully adjusted models. These results may suggest that acquiring food is prioritized, whereas other bills are seen as less urgent upon job loss.

Our analyses have several limitations, including the use of a broad disability measure that does not specify whether one has a physical, cognitive, sensory, or mental health impairment.

The data also focus on the first six months of the pandemic, and thus do not reveal longer-term adaptations or consequences, such as downward job mobility. We also did not consider and formally evaluate a full range of potential mediators linking disability to economic and food insecurity. Despite these limitations, our results clearly show that while relatively few older adults experienced hardships during the initial months of the pandemic, the toll was more severe for those with three or more functional limitations. Difficulties procuring adequate food and paying for essentials, like housing or utilities, may compound the underlying financial and health disadvantages and social isolation already experienced by older adults with impairments (Brown et al., 2020; Carr, 2019; Lebrasseur et al., 2021). Service providers should recognize and attempt to remedy these obstacles, especially as they may extend to access to vaccines and other supports and services required by older adults at later stages of the pandemic. Future studies should further explore the extent to which both structural and interpersonal ableism impede older adults with disability from receiving the goods and services they require, especially during time periods of high overall need, such as the recent pandemic (Hatzenbuehler, 2016).

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Table 1. Sample Characteristics by Disability Status, HRS COVID-19 Sample. 2020 (N = 3,166)

Variables	Mean ± *SD* or %				F (df_b, df_w) or χ^2 (df)	*Significant subgroup differences*
	Total sample (n = 3,166)	0 functional limitation [a] (n = 1,140, 36%)	1-2 functional limitations [b] (n = 855, 27%)	3+ functional limitations [c] (n = 1,171, 37%)		
Hardships during the pandemic [d]						
Missed any regular payments [e]	9.4	7.2	8.2	12.5	20.914 (2) ***	ac, bc
Could not pay medical bills	4.2	2.5	4.7	5.6	13.460 (2) ***	ab, ac
Income has gone down	16.7	19.4	16.4	14.3	10.994 (2) **	ac
Income-driven food insecurity	7.5	4.6	7.4	10.4	27.693 (2) **	ab, ac, bc
Logistics-driven food insecurity	15.8	11.2	14.5	21.2	44.472 (2) ***	ac, bc
Employment changes during the pandemic						
Employment changes					101.182 (4) ***	
Not working prior to the pandemic	26.3	19.4	22.3	36.0		ac, bc
Employed [f]	61.3	66.5	62.5	55.5		ac, bc
Lost job in pandemic [g]	12.3	14.1	15.2	8.5		ac, bc
Demographic and socioeconomic characteristics						
Age (years)	68.71 ± 10.38	65.91 ± 9.15	69.25 ± 10.40	71.04 ± 10.84	75.632 (2, 3163) ***	ab, ac, bc
< 65 years old	40.8	51.6	36.3	33.6	127.285 (4) ***	ab, ac
65-74 years old	29.9	29.1	33.3	28.3		ab, bc
≥ 75 years old	29.3	19.3	30.4	38.2		ab, ac, bc
Sex					69.575 (2) ***	
Male	41.0	49.9	40.2	32.9		ab, ac, bc
Female	59.0	50.1	59.8	67.1		ab, ac, bc
Marital status					119.365 (6) ***	
Married or partnered	54.0	63.3	56.5	43.1		ab, ac, bc
Separated or divorced	19.7	17.3	17.2	23.8		ac, bc
Widowed	18.9	11.8	19.2	25.6		ab, ac, bc
Never married or other	7.4	7.5	7.1	7.4		
Race and ethnicity					17.217 (6) **	
non-Hispanic White	58.3	59.8	61.3	54.7		ac, bc
non-Hispanic Black	21.1	19.6	19.1	23.9		ac, bc
Hispanic of any race	15.7	14.6	15.7	16.8		
non-Hispanic other race	4.9	6.0	4.0	4.6		

Number of household members	2.42 ± 1.34	2.50 ± 1.27	2.39 ± 1.33	2.36 ± 1.40	3.626 (2, 3163) *	ac
Years of education	13.07 ± 3.19	13.75 ± 3.09	13.25 ± 3.05	12.29 ± 3.23	62.432 (2, 3163) ***	ab, ac, bc
Total household income ($)	87,379 ± 287,734	125,865 ± 359,501	89,338 ± 356,576	48,755 ± 55,208	20.475 (2, 3163) ***	ab, ac, bc
Total non-housing assets ($)	349,382 ± 1,252,136	515,475 ± 1,780,279	356,502 ± 1,062,729	183,658 ± 533,776	20.008 (2, 3163) ***	ab, ac, bc
Total housing assets ($)	133,119 ± 209,309	174,796 ± 260,707	134,534 ± 182,334	91,803 ± 157,404	45.511 (2, 3163) ***	ab, ac, bc
Health characteristics						
Self-rated health (1-5)	3.08 ± 1.02	3.61 ± 0.87	3.24 ± 0.84	2.45 ± 0.92	515.596 (2, 3163) ***	ab, ac, bc
Depressive symptoms (CES-D, 0-8)	1.37 ± 1.97	0.72 ± 1.41	1.09 ± 1.62	2.19 ± 2.34	192.754 (2, 3163) ***	ab, ac, bc
Number of chronic health conditions (0-8) [h]	2.14 ± 1.48	1.41 ± 1.21	2.03 ± 1.29	2.92 ± 1.46	362.506 (2, 3163) ***	ab, ac, bc
Self or coresident had COVID-19	3.1	2.5	3.4	3.5	2.447 (2)	

Notes. Significant differences across disability subgroups were evaluated using one-way ANOVA tests for continuous variables and chi-square tests for categorical variables. Statistically significant differences denoted as *** $p < .001$, ** $p < .01$, * $p < .05$. *Post-hoc* comparisons were also conducted using ANOVA; significant ($p < .05$) subgroup differences are denoted as *ab*: 0 functional limitations (FL) vs. 1-2 FL; *ac*: 0 FL vs. 3+ FL; *bc*: 1-2 FL vs. 3+ FL.

[d] Respondents selected all types of hardships that applied to their experiences since the start of the pandemic.

[e] Missed any regular payments on rent, mortgage, credit cards, other debt, utilities, or insurance.

[f] A category of "employed" included respondents who reported that work was not affected due to the pandemic (n = 1,437), work was affected but did not lose a job (n = 502), or work was affected and had to stop work entirely, but found a new job (n = 15).

[g] A category of "lost job in pandemic" included respondents who reported that work was affected and had to stop work entirely and did not find a new job at the time of the interviews (n = 393).

[h] chronic health conditions included: ever had high blood pressure, diabetes, cancer, lung disease, heart problems, stroke, psychiatric problems, or arthritis.

Table 2. Logistic Regressions Predicting Whether Respondents Experienced Financial Hardships During the COVID-19 Pandemic, HRS COVID-19 Sample, 2020 (N = 3,166)

	Missed any regular payments (n = 298, 9.4%)				Could not pay medical bills (n = 134, 4.2%)			
	Odds ratio (95% C.I.)				Odds ratio (95% C.I.)			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Disability								
0 functional limitation (ref.)								
1-2 functional limitations	1.151	1.141	1.369†	1.294	1.880**	1.857*	1.921*	1.618†
	(0.83, 1.60)	(0.81, 1.60)	(0.94, 1.99)	(0.88, 1.91)	(1.16, 3.06)	(1.14, 3.03)	(1.15, 3.20)	(0.95, 2.75)
3+ functional limitations	1.838***	2.162***	2.089***	1.540*	2.252***	2.437***	1.949**	1.016
	(1.38, 2.44)	(1.61, 2.90)	(1.48, 2.95)	(1.03, 2.30)	(1.44, 3.52)	(1.55, 3.84)	(1.19, 3.20)	(0.57, 1.80)
Employment changes during the pandemic								
Not working prior to the pandemic (ref.)								
Employed		1.353†	1.240	1.311		0.912	0.932	1.056
		(0.98, 1.86)	(0.87, 1.77)	(0.90, 1.90)		(0.59, 1.40)	(0.59, 1.48)	(0.66, 1.70)
Lost job in pandemic		4.644***	2.816***	3.040***		2.708***	2.122**	2.459**
		(3.20, 6.74)	(1.84, 4.31)	(1.95, 4.73)		(1.64, 4.47)	(1.23, 3.67)	(1.39, 4.35)
Intercept	0.078***	0.046***	0.028***	0.015***	0.026***	0.022***	0.016***	0.015***
-2 Log likelihood	1955.019	1879.328	1508.416	1423.532	1095.461	1072.953	953.840	899.623
Nagelkerke R^2	0.014	0.064	0.239	0.273	0.015	0.039	0.125	0.162

Notes. Model 3 adjusted for demographic (age, race/ethnicity, sex, marital status, and number of household members) and socioeconomic characteristics (years of education, log of total household income, log of total household non-housing assets, and log of total household housing assets). Model 4 further controlled for health characteristics (self-rated health, depressive symptoms, comorbid chronic conditions, and whether self or coresident had been diagnosed with COVID-19). ref. = reference group. *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$.

Table 3. Logistic Regressions Predicting Whether Respondents Experienced Income Declines During the COVID-19 Pandemic, HRS COVID-19 Sample, 2020 (N = 3,166)

	Income went down (n = 528, 16.7%)			
	Odds ratio (95% C.I.)			
	Model 1	Model 2	Model 3	Model 4
Disability				
0 functional limitation (ref.)				
1-2 functional limitations	0.814†	0.764*	0.866	0.810
	(0.65, 1.03)	(0.59, 0.99)	(0.66, 1.14)	(0.61, 1.07)
3+ functional limitations	0.692***	0.848	1.124	0.980
	(0.56, 0.86)	(0.67, 1.08)	(0.86, 1.47)	(0.72, 1.34)
Employment changes during the pandemic				
Not working prior to the pandemic (ref.)				
Employed		1.654***	1.388*	1.426*
		(1.24, 2.20)	(1.02, 1.88)	(1.05, 1.94)
Lost job in pandemic		13.421***	10.359***	10.665***
		(9.71, 18.55)	(7.33, 14.64)	(7.49, 15.18)
Intercept	0.240***	0.101***	0.053***	0.080***
-2 Log likelihood	2843.066	2488.375	2258.132	2217.238
Nagelkerke R^2	0.006	0.184	0.236	0.244

Notes. Model 3 adjusted for demographic (age, race/ethnicity, sex, marital status, and number of household members) and socioeconomic characteristics (years of education, log of total household income, log of total household non-housing assets, and log of total household housing assets). Model 4 further controlled for health characteristics (self-rated health, depressive symptoms, comorbid chronic conditions, and whether self or coresident had been diagnosed with COVID-19). ref. = reference group. *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$.

Table 4. Logistic Regressions Predicting Whether Respondents Experienced Food Insecurity During the COVID-19 Pandemic, HRS COVID-19 Sample, 2020 (N = 3,166)

	Income-driven food insecurity (n = 238, 7.5%)				Logistics-driven food insecurity (n = 500, 15.8%)			
	Odds ratio (95% C.I.)				Odds ratio (95% C.I.)			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Disability								
0 functional limitation (ref.)								
1-2 functional limitations	1.631**	1.604*	1.821**	1.684*	1.341*	1.327*	1.314†	1.170
	(1.12, 2.38)	(1.10, 2.34)	(1.21, 2.73)	(1.11, 2.56)	(1.03, 1.75)	(1.02, 1.73)	(1.00, 1.74)	(0.88, 1.56)
3+ functional limitations	2.385***	2.444***	2.058***	1.368	2.124***	2.134***	2.117***	1.515**
	(1.71, 3.33)	(1.74, 3.43)	(1.41, 3.01)	(0.88, 2.12)	(1.69, 2.68)	(1.69, 2.70)	(1.64, 2.74)	(1.12, 2.04)
Employment changes during the pandemic								
Not working prior to the pandemic (ref.)								
Employed		0.734*	0.736†	0.762		0.819†	0.800†	0.847
		(0.54, 1.00)	(0.52, 1.04)	(0.54, 1.08)		(0.66, 1.02)	(0.63, 1.01)	(0.67, 1.08)
Lost job in pandemic		1.872**	1.110	1.156		1.407*	1.122	1.162
		(1.27, 2.77)	(0.71, 1.73)	(0.73, 1.83)		(1.03, 1.92)	(0.81, 1.56)	(0.83, 1.63)
Intercept	0.049***	0.052***	0.129***	0.097***	0.126***	0.136***	0.071***	0.043***
-2 Log likelihood	1661.252	1636.520	1388.249	1326.355	2717.990	2703.612	2555.761	2468.779
Nagelkerke R^2	0.021	0.040	0.175	0.204	0.024	0.031	0.055	0.083

Notes. Model 3 adjusted for demographic (age, race/ethnicity, sex, marital status, and number of household members) and socioeconomic characteristics (years of education, log of total household income, log of total household non-housing assets, and log of total household housing assets). Model 4 further controlled for health characteristics (self-rated health, depressive symptoms, comorbid chronic conditions, and whether self or coresident had been diagnosed with COVID-19). ref. = reference group. *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$.