The Effect of COVID-19 on Older Americans:

Preliminary Results from the HRS COVID-19 Project

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Abstract

Research on the health effects of the COVID-19 pandemic has been limited by a shortage of nationally representative population studies with good prior observation on health and other factors. The Health and Retirement Study's 2020 wave has been ongoing during the pandemic. We added new content related to COVID-19 in June at the same time as we released a randomly selected quarter of the sample. To facilitate early research on this immediate threat to public health, we will make an exceptional early release of data from about 3200 respondents from that quarter-sample in early November. We propose here to present descriptive evidence on how the pandemic affected the lives of older Americans using this early release data. Among other outcomes, we will investigate prevalence of the disease in the household and testing for COVID-19, the incidence of deferred or forgone health care, some consequences for physical and mental health, as well as the effect on work, incomes and spending. We will explore disparities by race, ethnicity, education, and age.

Preliminary results

The data with appropriate weights will be released in the first days of November. Here we show some very preliminary results using the production data without weights.

The COVID-19 module of HRS 2020 will be administered on the 50% random subsample of households who were originally assigned to enhanced face-to-face interviewing (EFTF). Due to the restrictions on social contact during the fieldwork period, all interviews were conducted via telephone. This EFTF subsample was further split into two random subsamples. The first one, the EFTF1 sample was released to fieldwork in June; the second one, EFTF2, was released to fieldwork in September. This release includes 3266 respondents from the EFTF1 sample, which is an approximately 25% random sample of the original HRS sample. The field work for EFTF1 respondents is still under way; the response rate was 62% at the time this dataset was created. This is the sample for our analysis.

The sample consists of 3,266 respondents; of them 3,060 are age eligible respondents of age 55 or older (the most recent sample refreshment took place in 2016 with people of age 51 through 56). 35 respondents had missing data on key variables and we dropped them from the sample. The sample for

this analysis consists of 3,025 respondents of age 55 or older. Average age is 65 in this sample; there are 635 Black respondents and 481 Hispanic respondents (unweighted proportions are 21 and 16 percent, respectively).

The COVID-12 module of HRS 2020 contains six groups of questions, on COVID experience and testing; effects on access to health care access in general; effects of the economic impact payments; effects on work, business, income and economic hardship; effects on living arrangements; caregiving. In this analysis we focus on COVID experience, the effects on health care access, and the effects on work, income and economic hardship.

Experience of COVID-19

The HRS nationally representative sample captures well the regional variation in exposure to COVID-19. One way to see this is to compare the proportion of HRS respondents who reported to have had a positive test for COVID-19 with the fraction of the population of their county of residence who had been confirmed with COVID-19 as of the date of the HRS interview, using county-level data at Johns Hopkins University. We created four equal-sized groups (quartiles) by the incidence rates in the county of residence and compare the confirmed case rate per 100,000 population within each quartile with the rate of positive tests reported in HRS. Figure 1 shows that the two incidence rates are very similar. HRS is slightly higher overall, which probably reflects its different age composition.

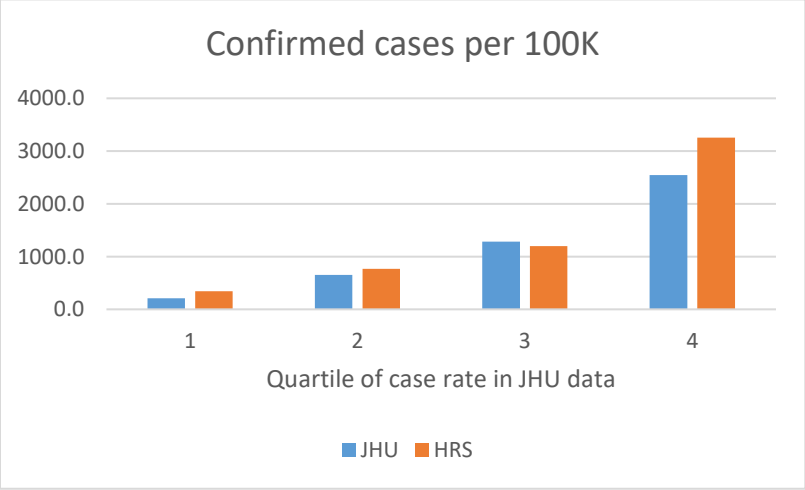


Figure 1. COVID-19 cases per 100K in four quartiles of the county of residence by incidence rate. HRS Early COVID sample and Johns Hopkins University data.

Figure 2 shows the COVID-19 incidence rate in our sample, by educational attainment (5 categories) separately for Whites, Blacks and Hispanics. This is the proportion of respondents who said they had the disease or reported to have tested positive. The figure shows low incidence rates, most of which are below 5 percent (0.05). Higher educated respondents are slightly more likely to report that they had COVID-19, and, at the same time, minorities, especially Hispanics, are significantly more likely to report that they had the disease.

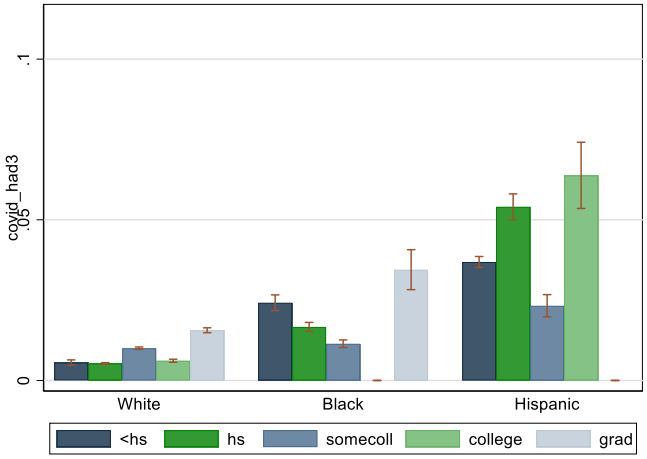
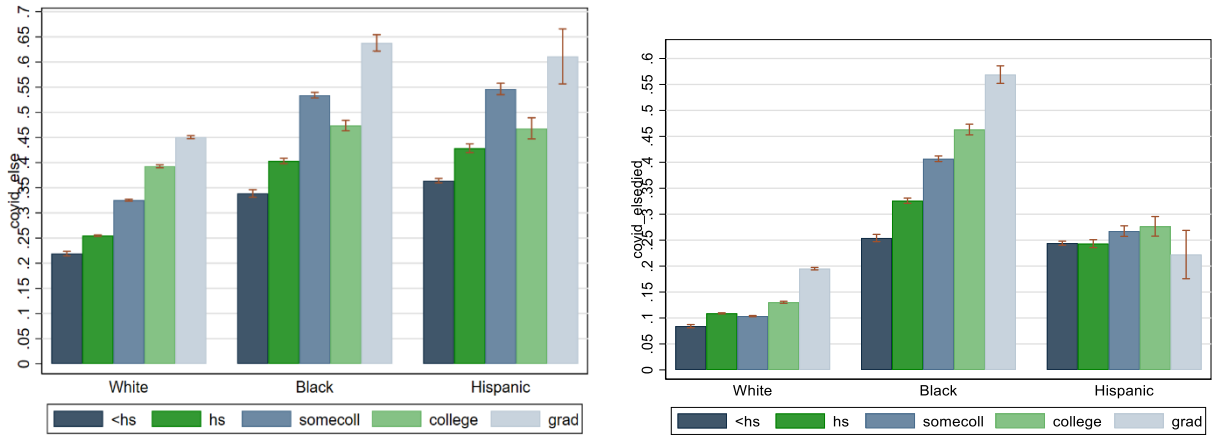


Figure 2. Proportion who had COVID-19

Besides asking about their own (and their family's) experience with the disease, the HRS asks whether respondents know somebody who had COVID-19 and whether they know somebody who died of COVID-19. Figure 3 shows a strong positive gradient with education and much higher rates for Blacks than Whites, with Hispanic rates similar to Blacks in terms of known cases but in-between Whites and Blacks in terms of known deaths. Most likely, these patterns reflect differences in the size of people's networks as well as differences in the incidence of the disease in people's networks.



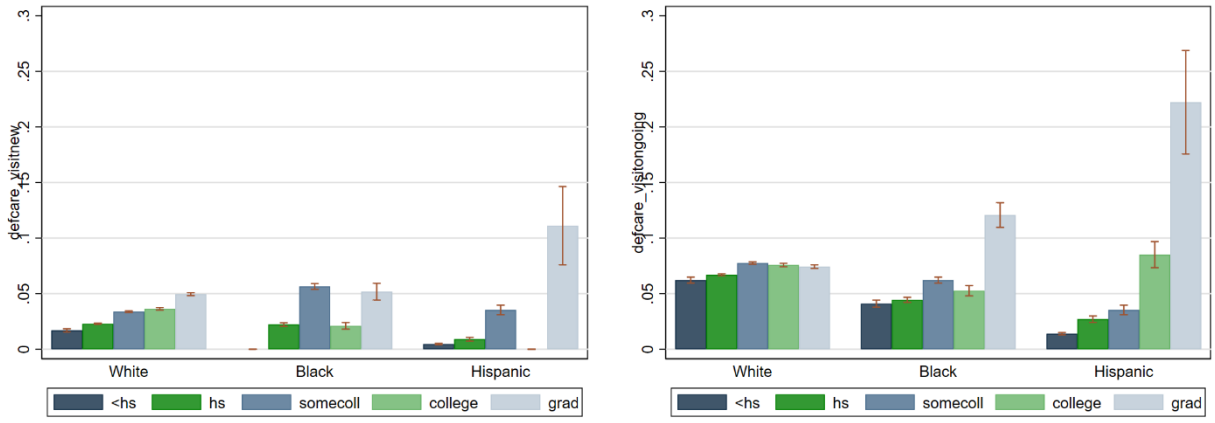
A Knowing somebody with COVID-19

B Knowing somebody who died of COVID-19

Figure 3. Proportion who know somebody with the disease (A) or somebody who died of the disease (B)

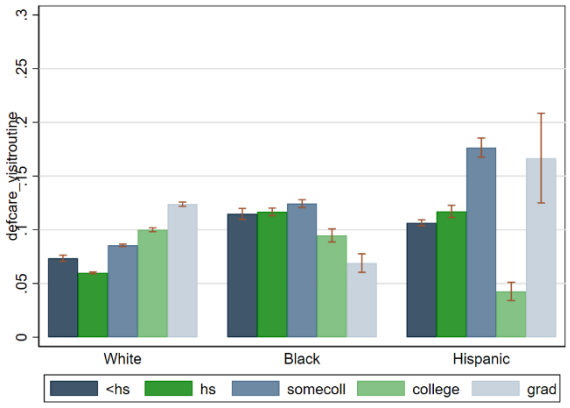
Impact on access to health care

Figure 4 shows the proportion of respondents who had their doctor's visits deferred or canceled because of COVID-19 (the interviewers instructed respondents not to count online visits as canceled visits). The figure shows visits about new conditions, visits about ongoing conditions and routine checkups and screening. There is a positive association of deferred visits with the level of education, but it's weak for deferred visits about ongoing conditions and among minorities. The differences by race or ethnicity are small.



A Deferred visit about new condition

B Deferred visit about ongoing condition

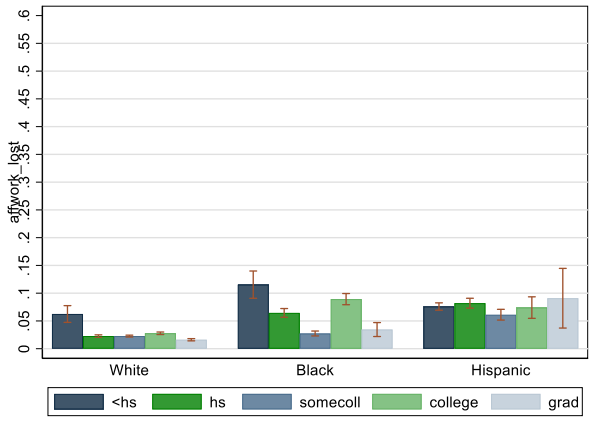


C Deferred routine checkup or screening

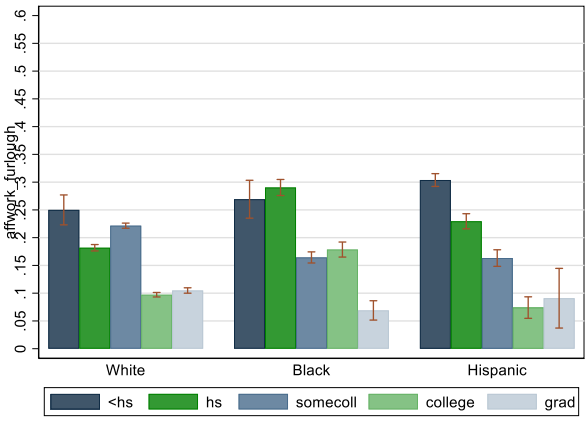
Figure 4. Proportion who had their doctor's visit deferred or canceled because of COVID-19

Impact on work, income, expenditures and economic hardship

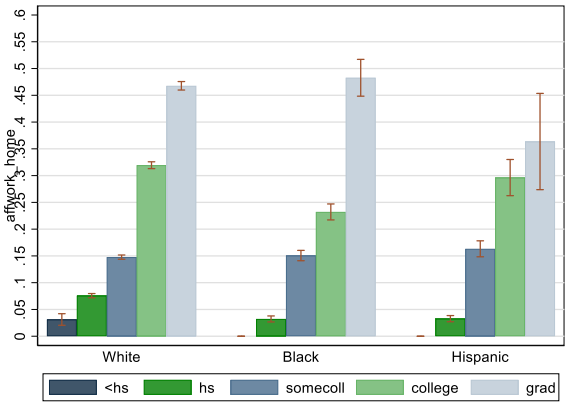
We first look at the effect of COVID-19 on work among people who worked before March 2020. About 4 percent of the respondents reported to have lost their jobs due to COVID-19, with a weak negative association with education and higher rates among minorities. 18 percent reported that they were furloughed, with a strong negative education gradient and small differences by race or ethnicity. Perhaps the most striking gradient by education is in the proportion of people who switched to working from home as a result of COVID-19, with over 45 percent of workers with a graduate degree compared to 5 percent among high school graduates and less than one percent among workers with less than high school education. Racial and ethnic differences in working from home are small among the more educated, but they are larger among the less educated.



A Lost job



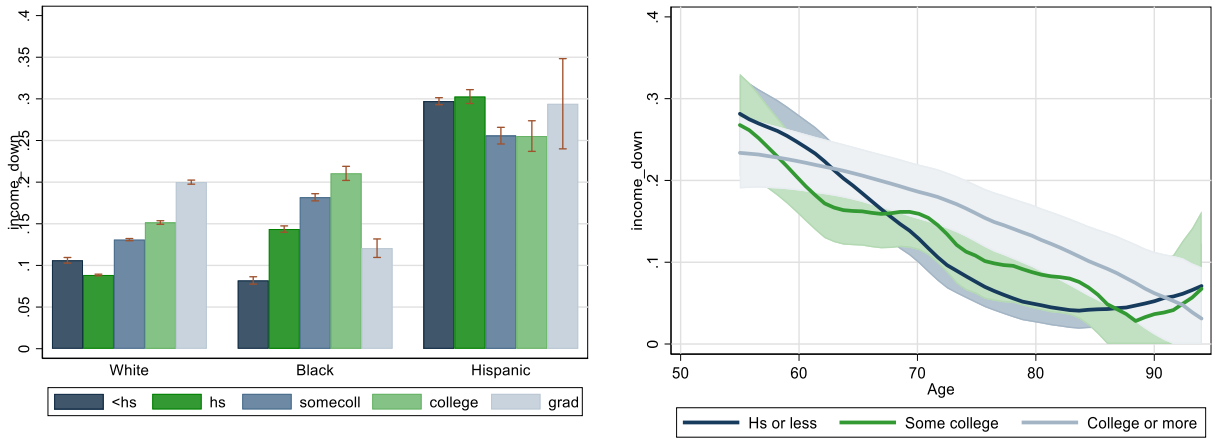
B Was furloughed



C Switched to work from home

Figure 5. Proportion who had their jobs affected by COVID-19

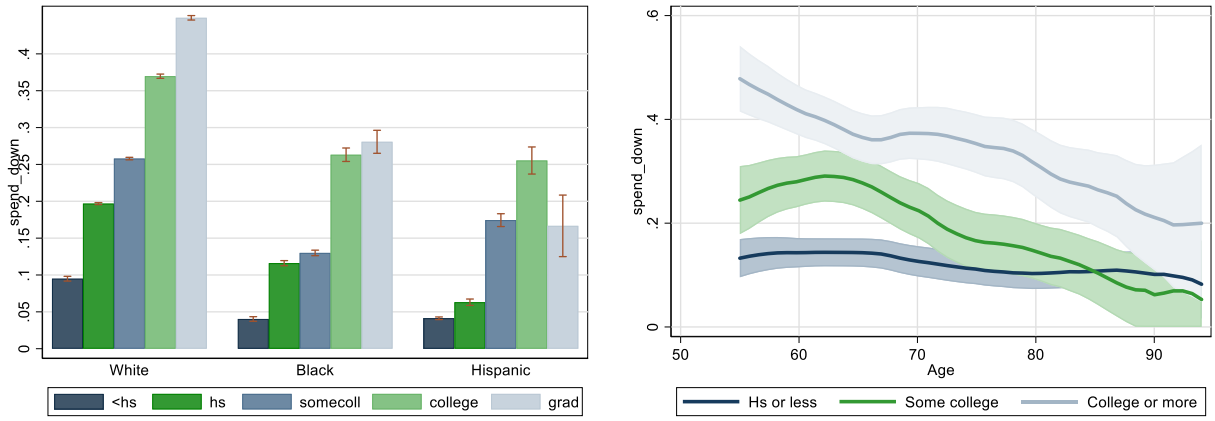
After work, we turn to the effects on household income and economic hardship. Figure 6 shows the proportion of people who reported that their household income decreased because of COVID-19. The left panel shows that higher educated respondents were more likely to experience a decrease in income, so were Hispanics compared to Blacks and Whites, who had similar rates conditional on education. The right panel of the figure shows that the proportions are similar by age among people below age 65 and above age 90; the educational differences are more pronounced between ages 70 and 85.



A By race, ethnicity and education B By age and education

Figure 6. Proportion who had their income reduced

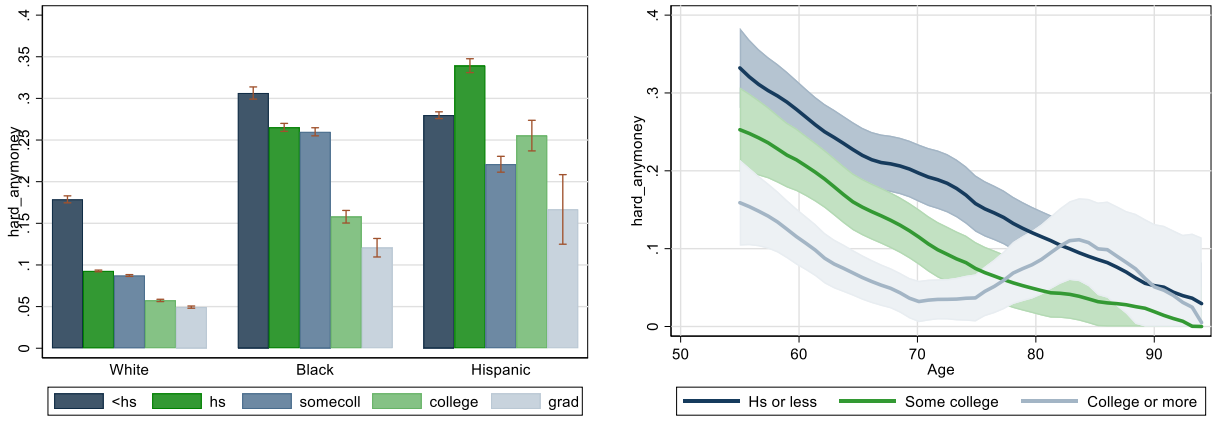
The differences by education are even stronger in terms of the proportion of households that decreased their expenditures due to COVID-19. Figure 7 shows that 45 percent of Whites with a graduate degree decreased their expenditures, compared to 20 percent with a high school degree and 10 percent without a high school degree. Blacks and Hispanics are much less likely to have reduced their expenditures compared to whites of the same level of education. The educational differences are prevalent across all age groups, but the age profiles are declining for those with some college or a college degree and flat among respondents with a high school degree or less.



A By race, ethnicity and education B By age and education

Figure 7. Proportion who reduced their expenditures

Not all expenditure cuts translate into economic hardship. Figure 8 shows that the education, racial and ethnic gradient is of the opposite sign in terms of the proportion of households that experienced some kind of economic hardship (defined as missed payments on rent, mortgage, credit cards, other debt, utilities or insurance or not having enough money to buy medications or food). Panel B of Figure 8 shows a strong and steady negative age gradient for all levels of education.



A By race, ethnicity and education B By age and education

Figure 8. Proportion who experienced economic hardship

The effect of deferred care and economic hardship on health

In the last part of this report we show results of linear regressions with three dependent variables: self-rated health (standardized; higher values meaning better health); the CESD score of depression

(standardized; higher values mean more depression); the subjective probability of living to a target age (0 to 1; target age is 75 of below age 65, 80 for ages 65-69, 85 for ages 70-74, etc.). All regressions include as covariates gender, age (in quadratic), whether Black, whether Hispanic, education (4 categories + reference group) and the lagged (previous survey wave) value of the dependent variable. As a result, the rest of the coefficients show differences among respondents with similar gender, age, race, ethnicity, education who had similar values of the dependent variable two years ago.

Table 1 shows the coefficient estimates from a set of regressions with the most important deferred health care variables on the right-hand side. The only statistically significant association is lower self-rated health by 0.2 standard deviation among respondents who deferred a doctor's visit for an ongoing condition. All other associations are small and/or statistically insignificant

Table 1. Health and deferred access to health care due to COVID-19

VARIABLES	(1) Self-rated health (std)	(2) CESD (std)	(3) Longevity probability
Surgery deferred or forgone	-0.12	0.18	0.00
	(0.069)	(0.098)	(0.024)
Doctor's visit (new condition) deferred or forgone	0.00	0.19	-0.01
	(0.080)	(0.098)	(0.023)
Doctor's visit (ongoing condition) deferred or forgone	-0.20**	0.12	-0.04
	(0.053)	(0.080)	(0.018)
Doctor's visit (routine checkup, screening) deferred or forgone	0.00	0.03	0.01
	(0.045)	(0.058)	(0.017)
Dental care deferred or forgone	0.02	0.01	0.02
	(0.034)	(0.045)	(0.012)
Covariates (gender, age quadratic, race, ethnicity, education, lagged dependent variable)	YES	YES	YES
Observations	2,847	2,743	2,514
R-squared	0.522	0.390	0.424
Mean of dependent variable	0.000	0.000	0.542
Standard deviation of dependent variable	1.000	1.000	0.312

Standard errors clustered at the household level. **p<0.01, *p<0.05

Table 2 shows the results of similar regressions with the experience of the economic effects of COVID-19 on the right-hand side. The associations with respect to reported income decline are weak and

statistically insignificant, and so are all associations with the subjective longevity probability on the left-hand side. Decreased spending is weakly positively associated with self-rated health (conditional on demographics and previous wave self-rated health). One way to interpret this coefficient is that people who used to spend on items that weren't available during the pandemic were more successful at maintaining their (subjective) health. The coefficient on spending decline for CESD depression is zero. In contrast, there is a negative association with respect to experiencing economic hardship; this is weaker for self-rated health but stronger for CESD depression.

Table 2. Health and the economic effects of COVID-19

VARIABLES	(1) Self-rated health (std)	(2) CESD (std)	(3) Longevity probability
Income decreased because of COVID pandemic	-0.04	0.08	0.01
	(0.036)	(0.045)	(0.013)
Spending decreased because of COVID pandemic	0.10**	0.01	0.01
	(0.031)	(0.036)	(0.011)
Economic hardship because of COVID pandemic	-0.10*	0.24**	-0.02
	(0.040)	(0.057)	(0.017)
Covariates (gender, age quadratic, race, ethnicity, education, lagged dependent variable)	YES	YES	YES
Observations	2,840	2,737	2,508
R-squared	0.532	0.392	0.422
Mean of dependent variable	0.000	0.000	0.542
Standard deviation of dependent variable	1.000	1.000	0.312

Standard errors clustered at the household level. **p<0.01, *p<0.05

Conclusions

Our preliminary analysis has uncovered interesting, and sometimes unexpected, patters of social differences in the experienced effect of the COVID-19 pandemic. Our county-level comparison with the Johns Hopkins University data provide validation for the HRS measure of COVID-19 experience. More educated respondents were found to be more likely to experience the disease but so were Black and Hispanic respondents. More educated respondents were also found to be more likely to know somebody who had OCID-19 or died of it. Smaller disparities were found in terms of deferred health

care, and deferred health care was not significantly associated with subjective measures of health (with the potential exception of somewhat higher depression found among those with a deferred doctor's visits about ongoing conditions). We found substantial differences in how the pandemic affected work, with somewhat higher propensity to lose one's job among Blacks and Hispanics, a higher probability to be furloughed among less educated, and a strong positive gradient by education on switching to work from home. Reported decreases in income were found to have somewhat positively associated with education, reported decreases in spending were found to have strongly positively associated with education, while the experience of economic hardship due to the pandemic was stronger among the less educated. All of the economic effects of the COVID-19 pandemic were found to be much weaker among the older respondents. The association of the experience of economic hardship was found to be negative with subjective health and positively with depression (worse health and more depressed).