

## Special Article

# A National Study of Racial–Ethnic Differences in COVID-19 Concerns Among Older Americans: Evidence From the Health and Retirement Study

Zhiyong Lin, PhD<sup>1,\*</sup> and Hui Liu, PhD<sup>2</sup>

<sup>1</sup>Center on Aging and Population Sciences and Population Research Center, The University of Texas at Austin, Austin, Texas, USA. <sup>2</sup>Department of Sociology, Michigan State University, East Lansing, East Lansing, Michigan, USA.

\*Address correspondence to: Zhiyong Lin, PhD, Center on Aging and Population Sciences and Population Research Center, The University of Texas at Austin, 305 E. 23rd Street/RLP 2.602, Mail Stop G1800, Austin, TX 78712, USA. E-mail: [zhiyong.lin@austin.utexas.edu](mailto:zhiyong.lin@austin.utexas.edu)

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## Abstract

**Objectives:** Concerns about coronavirus disease 2019 (COVID-19) are an important emotional reaction to the pandemic and represent a key pandemic-related mental health outcome. We provide the first population-based evidence of racial–ethnic differences in COVID-19 concerns among older Americans during the COVID-19 outbreak.

**Methods:** We analyzed data from the 2020 Health and Retirement Study COVID-19 project. The sample included 2,879 respondents (aged 50 and older) who were interviewed from June to September 2020 and had completed measures on COVID-19 concerns and other key covariates. Ordinary least squares regression models were estimated to assess racial–ethnic differences in COVID-19 concerns. Formal mediation analysis was conducted to test potential mediating roles of exposures to COVID-19 risks, preexisting health status, and socioeconomic resources in accounting for racial–ethnic differences in COVID-19 concerns.

**Results:** Non-Hispanic Black and Hispanic Americans showed significantly greater concerns about the COVID-19 pandemic than non-Hispanic White Americans. Racial–ethnic minority older adults also had higher proportions of knowing someone who had contracted or died from COVID-19 than White older adults. Unequal exposures to COVID-19 risks by race–ethnicity and, to a lesser degree, preexisting health inequalities accounted for only part of the racial–ethnic differences in COVID-19 concerns.

**Discussion:** Our findings call for more research and policy interventions to lessen the disproportionate burden of COVID-19 experienced by older adults of racial–ethnic minority groups.

**Keywords:** COVID-19, Health disparities, Minority aging, Race–ethnicity

The novel coronavirus disease 2019 (COVID-19) is an infectious disease that continues to seriously threaten global public health. It was declared by the World Health Organization (WHO) as a public health emergency and international concern in January 2020 and a global pandemic in March 2020 (WHO, 2020). In the United States, the pandemic has led to more than 40 million confirmed

infections and 650,000 deaths, with disproportionately higher risks for older Americans and racial and ethnic minority groups (Centers for Disease Control and Prevention, 2021). Persons of color are also at greater risk of knowing someone who has been hospitalized or died from the coronavirus than White Americans (Gauthier et al., 2021; Millett et al., 2020). However, we know little about

whether such unequal exposure to COVID-19 may lead to racial-ethnic differences in emotional reactions to the pandemic, such as worry, fear, distress, and anxiety.

According to the psychology of pandemics, a pandemic is as much a psychological problem as a medical one (Taylor, 2019). For example, people are often concerned about their own risk of infections as well as the consequences for their families and other networks during a pandemic. Exposure to high levels of concerns may cause psychological and emotional strains and lead to serious negative impacts on one's life and health, although moderate concern may help increase one's intention and action to engage in more preventive behaviors such as accepting vaccinations, washing hands more frequently, and wearing a face mask (Zhou & Guo, 2021a). The negative impacts of COVID-19 concerns may be especially pronounced for older adults of racial-ethnic minority groups who tend to have fewer resources to cope with COVID-19 concerns on top of a myriad of racism and discrimination-related stressors as well as other aging-related life stressors (Garcia et al., 2021). Yet, little research has been conducted to understand whether racial-ethnic minority older Americans have elevated, similar, or fewer concerns about COVID-19 in comparison to their White counterparts. In this study, we perceive concerns about COVID-19 as an important cognitive manifestation of anxiety and a key mental health outcome during the pandemic that may be experienced unequally across racial-ethnic groups (Lee, 2020).

Previous studies suggest that older adults in general tend to report less negative emotions, perceive stress events as less unpleasant, and suffer less from anxiety and depressive symptoms during the COVID-19 pandemic, compared to their younger counterparts (Barber & Kim, 2021; Pearman et al., 2021). Yet, potential racial-ethnic variations are not examined in these studies. With only a few recent exceptions that suggest that Black and Hispanic older adults may be more vulnerable to various adverse outcomes related to COVID-19 than their White counterparts (Bui et al., 2021; Gauthier et al., 2021), most previous aging studies did not empirically explore racial-ethnic disparities in well-being during the pandemic. To the best of our knowledge, no studies have examined racial-ethnic differences in COVID-19 concerns among older adults using nationally representative data.

Despite the paucity of empirical evidence, Garcia et al. (2021) have developed a theoretical model explaining why the COVID-19 outbreak is particularly detrimental to the well-being of Black and Hispanic older adults, drawing on the fundamental cause theory (Link & Phelan, 1995). Fundamental cause theory envisions social conditions as the underlying causes of health conditions in the population (Phelan et al., 2010). Indeed, within racialized societies such as the United States, racism is a fundamental cause of racial-ethnic inequalities in health and well-being as it is related to unequal access to health-related resources and differential exposure to health risks (Williams

et al., 2019). Guided by the fundamental cause theory, Garcia et al. (2021) proposed three specific social mechanisms through which structural racism affects minority older adults during the pandemic: (a) unequal exposure to COVID-19 risks, (b) preexisting health inequalities, and (c) racial-ethnic disparities in social resources. These social pathways represent a complex dimension of health and further influence pandemic-related emotional reactions including concerns about the pandemic. However, it remains understudied how these social factors aggravate or alleviate racial-ethnic differences in COVID-19-related concerns.

In this study, we analyze the newly released data on COVID-19 from the Health and Retirement Study (HRS, 2020) to empirically test these potential mechanisms proposed by Garcia et al. (2021). Specifically, we test two hypotheses: First, following the fundamental cause theory, we expect that racial-ethnic minority older adults will experience greater COVID-19 concerns than their White counterparts (Hypothesis 1). Second, we hypothesize that exposures to COVID-19 risks, preexisting health status, and socioeconomic resources are potential mediators accounting for racial-ethnic differences in COVID-19 concerns (Hypothesis 2). The findings will help health policymakers and practitioners identify the most vulnerable subpopulations in order to design effective intervention strategies to reduce the negative social and psychological impacts of COVID-19 among older adults.

## Method

### Sample

We used data from the 2020 HRS COVID-19 project (early version 1.0), which is conducted by the Institute for Social Research at the University of Michigan (HRS, 2021). The COVID-19 module is being administrated to the 50% random subsample of households who were originally assigned to face-to-face interviews. This 50% random sample was further split into two random subsamples, with the first one (publicly released) collected on June 11, 2020 and the second one on September 24, 2020. Information in this study is from the first random subsample of 3,266 respondents, accounting for approximately 25% of the original HRS sample. All interviews have been conducted via telephone due to social contact restrictions. In the analysis, we excluded 148 nursing home residents, 54 respondents who were younger than age 50, and 157 respondents who were from racial-ethnic groups other than non-Hispanic White (hereafter, White), non-Hispanic Black (hereafter, Black), and Hispanic. We further excluded 28 respondents who had missing values on analytical variables. The final analytic sample included 2,879 respondents (1,744 Whites, 637 Blacks, and 498 Hispanics) aged 50 and older who lived in the community when they were interviewed in the United States.

## Measures

### COVID-19 concerns

The dependent variable is based on a single questionnaire item asking: "Overall, on a scale from 1 to 10, where 1 is the least concerned and 10 is the most concerned, how concerned are you about the coronavirus pandemic?" Responses ranged from 1 to 10. This measure is consistent with other recent studies on COVID-19-related stress, worries, or anxiety (Barber & Kim, 2021; Birditt et al., 2021; Pearman et al., 2021).

### Exposure to COVID-19

Our focal predictors, exposures to COVID-19 risks, were assessed by three dichotomous variables for experiences of COVID-19 infections, deaths, and tests, respectively. (1) We followed previous studies (Mueller et al., 2021) to define older adults being *exposed to COVID-19 infections* if they reported any of the three forms of direct experience (1 = yes, 0 = no): (a) had confirmed an infection themselves, (b) reported that a household member contracted the virus, and (c) reported that a friend or acquaintance had a confirmed case. (2) For *exposure to COVID-19 deaths*, respondents were asked: "Has anyone you know died from COVID-19?" with response options "yes," "no," "don't know," and "refuse." Because less than 1% of respondents chose "don't know" or "refuse" in this item, we used a dichotomous variable to indicate whether they witnessed any deaths in their social networks due to COVID-19 (1 = yes; 0 = otherwise). (3) We also included a dummy variable indicating whether respondents had ever been *tested for the coronavirus* (1 = yes; 0 = otherwise).

### Preexisting health status

We included five preexisting health-related covariates reflecting mental health (depressive symptoms), physical health (poor self-rated health and chronic diseases), and health behaviors (smoking and drinking). (a) We assessed *depressive symptoms* with an eight-item Center for Epidemiological Studies—Depression scale that assessed whether respondents felt depressed, felt that everything they did was an effort, sleep was restless, could not get going, felt lonely, enjoyed life, felt sad, and was happy much of the time during the past week. We reverse-coded positive items so that higher scores indicated higher levels of depressive symptoms (ranging from 0 to 8). (b) *Poor self-rated health* was a dummy variable coded as 1 if respondents reported their health as fair or poor, and 0 otherwise. (c) We used a summary measure of the total number of six ever-diagnosed *chronic diseases* (ranging from 0 to 6), including heart disease, stroke, diabetes, hypertension, chronic respiratory disease, and cancer. A recent study with similar measures of preexisting chronic conditions shows meaningful associations between these measures and risks of COVID-19 morbidity and mortality at both individual and national levels (Verderby et al., 2021). Health behaviors included two

dummy variables indicating (d) whether respondents were *current smokers* (1 = yes; 0 = otherwise) and (e) *current heavy drinkers* (1 = 7+ drinks/week; 0 = otherwise).

### Socioeconomic resources

We measured health-related socioeconomic resources with five indicators. (a) *Education* was measured in four categories: less than high school (reference), high school, some college, and college and above. (b) *Total household income* included respondent's and spouse's income from all sources for the last calendar year. (c) *Net household wealth* was measured as the total value of household assets minus household debts. Measures of income and wealth were transformed with a natural log to reduce the skewness of the distribution. Health care access and utilization were measured by two dichotomous variables indicating (d) whether respondents had private *health insurance* (through an employer or a business, coverage for retirees, and/or bought by themselves; 1 = yes; 0 = no), and (e) whether they had *visited hospital in the past year* (1 = yes; 0 = no; Brown, 2018).

### Control variables

We controlled for a series of sociodemographic covariates, including gender (1 = women, 0 = men), age groups (50–59 [reference], 60–69, 70–79, and 80 and older), partnership status (1 = partnered including the married and cohabitating, 0 = unpartnered), number of children, household size, whether respondents were born outside the United States (1 = yes, 0 = no), and whether they were employed at the time of the survey (1 = yes, 0 = no).

### Analytical Strategies

We estimated a series of ordinary least squares (OLS) regression models to assess racial-ethnic differences in COVID-19 concerns. Model 1 included race-ethnicity and basic demographic controls. Models 2–4 introduced potential mediating variables separately to evaluate to what extent racial-ethnic differences in COVID-19 concerns are explained by exposures to COVID-19 risks, preexisting health status, and socioeconomic resources. Model 5 included all covariates. Finally, we conducted formal mediation analysis using the Karlson–Holm–Breen (KHB) method (Kohler et al., 2010).

## Results

Table 1 displays descriptive statistics for all analyzed variables for the total sample as well as by racial-ethnic groups. The mean score of COVID-19 concerns was 7.86 ( $SD = 2.59$ , range = 1–10), with Black older adults reporting the highest levels of concerns toward COVID-19 (8.90), followed by Hispanic (8.20) and White (7.39) older adults. Results given in Table 1 also suggest that Black and

**Table 1.** Descriptive Statistics by Race–Ethnicity, HRS 2020

	Total		White		Black		Hispanic	
	N = 2,879		N = 1,744		N = 637		N = 498	
	Mean/%	SD	Mean/%	SD	Mean/%	SD	Mean/%	SD
COVID-19 concerns	7.86	2.59	7.39	2.61	8.90 <sup>a</sup>	2.16	8.20 <sup>a</sup>	2.57
Exposure to COVID-19								
COVID-19 infections	39.15		33.66		48.98 <sup>a</sup>		45.78 <sup>a</sup>	
COVID-19 deaths	19.97		11.93		37.99 <sup>a</sup>		25.10 <sup>a</sup>	
COVID-19 tests	20.11		16.74		29.04 <sup>a</sup>		20.48	
Preexisting health status								
CES-D score	1.41	1.99	1.26	1.90	1.61 <sup>a</sup>	2.00	1.69 <sup>a</sup>	2.22
Poor self-rated health	27.47		21.73		31.71 <sup>a</sup>		42.17 <sup>a</sup>	
Chronic diseases	1.50	1.18	1.49	1.22	1.67 <sup>a</sup>	1.13	1.45	1.03
Current smoker	11.64		9.98		17.43 <sup>a</sup>		10.04	
Current heavy drinker	11.11		12.96		9.42 <sup>a</sup>		6.83 <sup>a</sup>	
Socioeconomic resources								
Education								
Less than high school	14.28		6.59		17.54 <sup>a</sup>		37.15 <sup>a</sup>	
High school	31.61		32.40		30.61		30.12	
Some college	26.47		26.95		29.04		21.49 <sup>a</sup>	
College and more	27.65		34.06		22.92 <sup>a</sup>		11.24 <sup>a</sup>	
Household income (ln)	10.10	2.06	10.56	1.50	9.73 <sup>a</sup>	2.17	8.93 <sup>a</sup>	2.91
Household wealth (ln)	14.15	0.42	14.27	0.44	14.01 <sup>a</sup>	0.32	13.93 <sup>a</sup>	0.34
Private health insurance	48.38		56.14		40.66 <sup>a</sup>		31.12 <sup>a</sup>	
Hospital visit	19.52		21.85		18.68		12.45 <sup>a</sup>	
Controls								
Female	59.95		58.77		62.95		60.24	
Age groups (years)								
50–59	22.20		17.78		28.10 <sup>a</sup>		30.12 <sup>a</sup>	
60–69	36.96		32.45		44.27 <sup>a</sup>		43.37 <sup>a</sup>	
70–79	23.06		26.55		17.58 <sup>a</sup>		17.87 <sup>a</sup>	
80+	17.78		23.22		10.05 <sup>a</sup>		8.63 <sup>a</sup>	
Partnered	59.12		63.07		42.54 <sup>a</sup>		66.47	
Number of children	3.01	2.02	2.77	1.82	3.33 <sup>a</sup>	2.33	3.45 <sup>a</sup>	2.15
Household size	1.73	1.28	1.48	0.96	1.95 <sup>a</sup>	1.54	2.30 <sup>a</sup>	1.62
Foreign-born	14.94		4.36		5.81		63.65 <sup>a</sup>	
Currently employed	28.24		26.26		30.16 <sup>a</sup>		32.13 <sup>a</sup>	

Note: HRS = Health and Retirement Study; COVID-19 = coronavirus disease 2019; CES-D = Center for Epidemiological Studies—Depression.

<sup>a</sup>Indicates statistically significant difference compared to White respondents at the 0.05 level.

Hispanic older adults were much more likely than White older adults to be exposed to COVID-19. Noticeably, Hispanic and Black respondents were 2 or 3 times as likely as White respondents to know any people who died from COVID-19. In terms of health status and socioeconomic resources, Black and Hispanic older adults tended to be disadvantaged in most indicators relative to their White counterparts.

Table 2 presents OLS regression results. Results of Model 1 given in Table 2 suggest that Black ( $b = 1.664, p < .001$ ) and Hispanic ( $b = 1.079, p < .001$ ) respondents reported significantly greater concerns about COVID-19 than White respondents when gender, age, partnership status, number of children, household size, nativity status, and employment

status were controlled. Model 2 added measures of exposure to COVID-19, suggesting that although experiencing COVID-19 infections was not statistically associated with an increased concern about COVID-19 among older adults, exposure to COVID-19 deaths and access to COVID-19 tests were positively associated with their concerns about COVID-19. Moreover, after the inclusion of exposure to COVID-19 variables, the size of racial–ethnic differences in COVID-19 concerns decreased for both Black and Hispanic older adults (comparing Models 2 vs. 1, but remained statistically significant). Model 3 added preexisting health status, suggesting that adverse health conditions were associated with increased concerns about COVID-19. Model 4 added education, household income, wealth, and health

**Table 2.** OLS Regression Models Predicting COVID-19 Concerns, HRS 2020

	Model 1	Model 2	Model 3	Model 4	Model 5
Race (ref. White)					
Black	1.664*** (0.122)	1.516*** (0.126)	1.623*** (0.122)	1.648*** (0.124)	1.472*** (0.128)
Hispanic	1.079*** <sup>a</sup> (0.164)	1.012*** <sup>a</sup> (0.165)	1.026*** <sup>a</sup> (0.165)	1.069*** <sup>a</sup> (0.171)	0.968*** <sup>a</sup> (0.171)
Exposure to COVID-19					
COVID-19 infections		0.173 (0.106)			0.168 (0.107)
COVID-19 deaths		0.387** (0.130)			0.389** (0.130)
COVID-19 tests		0.253* (0.117)			0.211 (0.118)
Preexisting health status					
CES-D score			0.075** (0.026)		0.067** (0.026)
Poor self-rated health			0.128 (0.120)		0.160 (0.121)
Chronic diseases			0.092* (0.045)		0.092* (0.046)
Current smoker			0.081 (0.150)		0.120 (0.151)
Current heavy drinker			0.071 (0.151)		0.068 (0.151)
Socioeconomic resources					
Education (ref. less than high school)					
High school				-0.275 (0.156)	-0.235 (0.157)
Some college				-0.183 (0.164)	-0.135 (0.165)
College and more				-0.063 (0.171)	-0.007 (0.175)
Household income (ln)				0.015 (0.025)	0.019 (0.025)
Household wealth (ln)				0.058 (0.039)	0.059 (0.039)
Private health insurance				-0.123 (0.104)	-0.077 (0.105)
Hospital visit				0.110 (0.119)	-0.038 (0.124)
Controls					
Female	0.428*** (0.098)	0.406*** (0.098)	0.443*** (0.100)	0.440*** (0.098)	
Age groups (ref. 50–59)					
60–69	0.085 (0.127)	0.077 (0.127)	0.106 (0.128)	0.074 (0.128)	0.092 (0.128)
70–79	0.391** (0.150)	0.425** (0.149)	0.403** (0.153)	0.354* (0.151)	0.412** (0.154)
80+	0.663*** (0.167)	0.725*** (0.167)	0.695*** (0.172)	0.624*** (0.168)	0.740*** (0.174)
Partnered	-0.028 (0.103)	-0.048 (0.103)	0.055 (0.104)	-0.036 (0.106)	0.004 (0.107)
Number of children	-0.060* (0.024)	-0.057* (0.024)	-0.067** (0.024)	-0.061* (0.025)	-0.062* (0.025)
Household size	-0.052 (0.039)	-0.054 (0.039)	-0.056 (0.039)	-0.050 (0.039)	-0.055 (0.039)
Foreign-born	-0.093 (0.167)	-0.090 (0.167)	-0.073 (0.167)	-0.123 (0.169)	-0.091 (0.169)
Currently employed	-0.215 (0.114)	-0.258* (0.114)	-0.080 (0.117)	-0.190 (0.120)	-0.134 (0.121)
Constant	7.122*** (0.174)	6.984*** (0.177)	6.751*** (0.195)	7.130*** (0.319)	6.543*** (0.341)
R <sup>2</sup>	0.081	0.089	0.089	0.083	0.098
Observations	2,879	2,879	2,879	2,879	2,879

Note: HRS = Health and Retirement Study; COVID-19 = coronavirus disease 2019; CES-D = Center for Epidemiological Studies—Depression; OLS = ordinary least squares.

<sup>a</sup>Difference between Black and Hispanic respondents is statistically significant at the 0.05 level.

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

care access and utilization, and results suggested that these socioeconomic indicators neither showed any protective effects on reducing older adults' COVID-19 concerns nor helped explain racial-ethnic differences in such concerns.

Table 3 displays results from the KHB formal mediation tests. These results suggest that all mediators together accounted for about 12% of Black-White differences and 10% of Hispanic-White differences in COVID-19 concerns, respectively. Specifically, differential exposures to COVID-19 risks explained 9% of Black-White differences and 6% of Hispanic-White differences in their COVID-19-related concerns. Preexisting health conditions provided statistically significant explanations for Hispanic older

adults' greater concerns about COVID-19 compared to Whites, but they did not explain Black-White differences in such concerns. Socioeconomic resources did not account for racial-ethnic differences in COVID-19 concerns.

## Discussion

This study provides the first population-based evidence of racial-ethnic differences in COVID-19 concerns among older adults during the COVID-19 outbreak in the United States. A number of studies, mostly using data aggregated at the county, state, or national levels, have recognized that the COVID-19 pandemic has disproportionately affected

**Table 3.** Mediation Analysis Results by Exposure to COVID-19, Preexisting Health Status, and Socioeconomic Resources, HRS 2020

	Black			Hispanic		
	Coef.	Z	% Explained	Coef.	Z	% Explained
Total effect	1.664***	13.75		1.079***	6.60	
Direct effect	1.472***	11.46		0.968***	5.65	
Indirect effect	0.192**	3.79	11.57***	0.111*	1.88	10.25*
Exposure to COVID-19			8.63**			6.08*
Preexisting health status			2.60			5.10*
Socioeconomic resources			0.34			-0.93

Note: HRS = Health and Retirement Study; COVID-19 = coronavirus disease 2019.  
 \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$ .

racial-ethnic minorities with a focus on confirmed cases and deaths from COVID-19 (Hooper et al., 2020; Mahajan & Larkins-Pettigrew, 2020; Sáenz & Garcia, 2021). However, few have examined unequal exposure to COVID-19 as a stressor that sustains or even exacerbates existing racial-ethnic inequalities at the individual level. Our analysis of nationally representative data from the HRS COVID-19 project moves beyond an examination of racial-ethnic disparities in COVID-19 incidence and mortality to study whether and how unequal exposure to COVID-19 risks results in racial-ethnic differences in older adults' concerns about COVID-19. Results suggest that Black and Hispanic older adults express much more concerns about the pandemic than their White counterparts (supporting Hypothesis 1). Differences in exposure to COVID-19 risks and, to a lesser degree, preexisting health inequalities contribute to racial-ethnic differences in COVID-19 concerns, although socioeconomic resources do not account for the greater COVID-19 concerns among minority older adults (partly supporting Hypothesis 2).

We found that Black and Hispanic older Americans showed significantly greater concerns about the COVID-19 pandemic than White Americans. This result is in line with a recent study that depicts the disproportionately negative impact of COVID-19 stressors (e.g., concerns about the risk of contracting the virus, worries about the future income loss) on the well-being of older persons of color (Bui et al., 2021). We also provide some evidence to support the fundamental cause theory and Garcia et al.'s (2021) framework about how structural racism as a fundamental cause of health inequalities makes Black and Hispanic older adults disproportionately affected by the pandemic. Consistent with their proposition about the unequal exposure to COVID-19 risks, we found that Black and Hispanic older adults not only had higher proportions of experiencing COVID-19 infections through themselves or their social networks, but they were also 2–3 times as likely as White older adults to know any people died from COVID-19. Moreover, these differentials in exposure to COVID-19 risks accounted for a significant share of racial-ethnic differences in COVID-19 concerns. COVID-19 deaths exemplify “bad” deaths that are marked by physical discomfort,

social isolation, and lack of preparation (Carr et al., 2020). They are especially distressing for survivors of racial-ethnic minorities who have experienced a disproportionately high proportion of deaths of family members and friends during the pandemic (Liu et al., 2021; Wang et al., 2021).

Garcia et al.'s (2021) framework also points to preexisting health conditions and socioeconomic resources as other potential mechanisms explaining racial-ethnic differences in well-being during the pandemic. Yet, our results provided little support to this proposition, showing that the assessed health-related factors only explained a small portion of Hispanic-White differences, and socioeconomic indicators did not explain any racial-ethnic differences in COVID-19 concerns. We noted that our measures of health conditions were relatively crude, which might have limited our ability to detect their effects on COVID-19 concerns. In terms of socioeconomic resources, contrary to the general literature on social inequality in well-being, we did not find any statistically significant associations between these indicators and COVID-19 concerns. Compared to those with lower socioeconomic status, older adults with higher socioeconomic status tend to have more resources that could be used to cope with COVID-19-related stressors, but they may also be more informed of the severity of the COVID-19 pandemic, which may boost their levels of concerns about the pandemic. This insignificant finding is consistent with newly emerging evidence that higher socioeconomic conditions do not necessarily reduce people's distress about COVID-19 (Zhou & Guo, 2021b).

This study has several limitations. First, our measure of COVID-19 concerns is based on a single questionnaire item measuring older adults' concerns about the pandemic in general. Although it is consistent with recent literature on COVID-19-related stress, worries, or anxiety (Barber & Kim, 2021; Pearman et al., 2021), future research should use qualitative or experiential designs to develop a more comprehensive measure of COVID-19-related well-being with multiple indicators. Second, for exposure to COVID-19 deaths, due to the data limitation, we were unable to differentiate the detrimental effects of experiencing deaths of family members versus other social networks. A recent study suggested that every death from COVID-19 will leave approximately

nine bereaved family members (Verderby et al., 2020). Future research should analyze data including more detailed information on exposure to COVID-19 deaths to help expand understanding of the social impacts of health crises. Third, although we found that exposure to COVID-19 risks partially explained racial-ethnic differences in COVID-19 concerns, the full models after controlling for all covariates still contained sizable unexplained racial-ethnic differences. Future studies should investigate additional social factors (e.g., occupation, social support, and neighborhood characteristics) that may help explain racial-ethnic differences in COVID-19 concerns. For example, Black and Hispanic people are more likely than White people to be part of the essential workforce, and in particular, in high-contact positions (e.g., bus drivers, cashiers, food service workers) where employees are at greatest risk of being exposed to the virus (Williams et al., 2020). Finally, this study is based on a very early version of the HRS COVID-19 project, and thus, many variables characterizing racism and racial inequalities experienced by minority older adults are not available for this round of data release. Also, we did not apply weights in the analysis because the early-released data did not provide a final analysis weight. Future research should analyze a more complete version of HRS when available or other nationally representative data with COVID-19 modules to continue to explore mechanisms underlying the disadvantages of the people of color during the pandemic.

Despite these limitations, we are among the first to use nationally representative individual-level data to explore racial-ethnic differences in COVID-19 concerns. People of color have borne the burden of excess illnesses and deaths from health disparities for centuries, and this pandemic has further compounded health and social disparities in communities of color (Cooper & Williams, 2020). Our findings call for more research and policy interventions to lessen the disproportionate burden of COVID-19 experienced by older adults of racial-ethnic minority groups.

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## Conflict of Interest

None declared.

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## Author Contributions

Z. Lin planned the study, conducted the analysis, and drafted the article. H. Liu guided the analysis and contributed to writing.

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