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Race and Ethnic Group Disparities in Emotional Distress Among Older Adults During the COVID-19 Pandemic

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Abstract

Background and Objectives: Framed within Conservation of Resources theory, this study addressed race–ethnic differences in the relationships between emotional distress and current and expected coronavirus disease 2019 (COVID-19) pandemic stressors.
Research Design and Methods: The study employed data from the Household Pulse Survey, a large national survey collecting weekly data to understand the experiences of Americans during the COVID-19 pandemic (age 55 and above; $N = 94,550$). Emotional distress included depression and anxiety symptoms. COVID-19 stressors included current and expected income, housing, health care, and food insecurities.
Results: Older persons of color reported higher rates of stressors and emotional distress than their White counterparts. In relation to current stressors, older Black persons responded with less emotional distress and older Latino persons responded with more emotional distress than older White persons. In addition, older persons of color were more likely to expect future resource losses related to COVID-19, and the association between these expectations and emotional distress varied by race–ethnic group.
Discussion and Implications: The findings reflected the disproportionate negative impact of COVID-19 stressors on emotional distress among older persons of color, providing a baseline for future studies to further examine the impacts of the pandemic among diverse older adult populations.

Keywords: Anxiety, Depression, Household Pulse Survey, Stress, Vulnerable populations

Quantifying the extent of social, economic, political, and health implications of the coronavirus disease 2019 (COVID-19) pandemic is not possible, but two consistent findings about disparities are clear. First, older adults have a higher risk of hospitalization and death from the disease than younger persons (Center for Disease Control and Prevention [CDC], 2020a). Second, persons of color, especially Black, Latino, and Native Americans persons, have higher risk of contracting COVID-19 than White persons (CDC, 2020a). The U.S. CDC reports that people of color

experience four to five times the hospitalization rate of White persons, and suffer a disproportionate risk of death due to COVID-19 (CDC, 2020a, b). The evidence points to social determinants of health as risk factors—including living arrangements, work circumstances, and preexisting health conditions (CDC, 2020b).

The health, economic, and social implications of the pandemic compound the long history of racism, racial inequality, and resource disparities experienced by persons of color in the United States. Job losses and business closures

impact individuals and families; many are struggling to pay their bills or secure adequate food (RAND Corporation, 2020). Recent data from the U.S. Census Bureau (2020) documents high anxiety and depression among adults. Older persons of color manage concerns about their own increased risk of contracting the illness, and concerns about the pandemic's consequences for family and other social network members, contributing to increased distress (Garcia et al., 2020). Research is needed to understand how the pandemic is related to emotional well-being among older persons of color (Pfefferbaum & North, 2020).

This study analyzed data from the Household Pulse Survey (HPS) to investigate the association between four types of COVID-19 stressors (current and future expectations of losses of income, housing, health care, and food resources) and emotional distress among older adults. This study contributed to the emerging research regarding the current pandemic by describing race–ethnic group disparities in the relationships between these COVID-19 stressors and emotional distress among older adults.

Conservation of Resources Theory and Emotional Distress

Hobfoll (2012) formalized the Conservation of Resources (COR) theory to help scholars understand the health consequences of exposure to toxic stressors. COR theory has been employed to study the health effects of traumas and stressors including poverty, hurricanes, floods, terrorism, and wars and other violent conflicts. According to COR theory, people strive to obtain, maintain, and protect valued resources, with the most basic of these relating to survival: food sufficiency and stable housing (Hobfoll & Lilly, 1993). When traumatic life events like the COVID-19 pandemic cause resource losses, the mental health consequences are expected to be felt disproportionately among persons of color due to long-term inequality and disparities that compromise their ability to obtain and maintain resources. Older persons of color are more likely to encounter the disaster with preexisting socioeconomic and health vulnerabilities (e.g., living in poverty, poor access to health care, limited resources for housing security; Hobfoll & Lilly, 1993) that result from racism and racial inequality experienced across the life course.

COR theory also posits that lost resources may not be recovered, and the expectation that resources may not be available in the future is especially distressing (Hobfoll & Lilly, 1993). Resource loss among resource-vulnerable people leads to a cycle of loss because their resource reservoir is often not large enough to sustain recovery of these valued resources during disasters (Hobfoll, 2012). The COVID-19 pandemic is a unique "rolling" disaster, with major implications for well-being that wax and wane as the disease moves in and out of populations and across geographic areas and time. While individuals with fewer resources may be able to cope with everyday, routine challenges (e.g., age and/or race discrimination, chronic illness, caregiving), they are less successful in coping with acute, high-stress conditions, such as experiencing a large-scale disaster (Hobfoll & Lilly, 1993). COR theory thus argues that disasters cause resource losses that are severe and difficult to overcome, especially among persons who do not have a reservoir of resources to draw on to offset and recover from these conditions.

For many people, the COVID-19 crisis resulted in traumatic threats to the basic resources necessary for maintaining a normal life, and further created uncertainty about the future (Gauthier et al., 2020). Thus, the stressors associated with the COVID-19 pandemic are viewed as major disruptions rather than everyday challenges because these stressors were not expected, threaten survival, and were extraordinary in scope and impact. A unique characteristic of the COVID-19 pandemic is there is no known end point, and thus it is not known when life will return to normal. Most Americans have not experienced a disaster of this magnitude and scale, yielding both current and future insecurity in terms of financial stability, housing, food, and health.

The pandemic displaced millions of Americans through job loss and limited access to health care, generated social turmoil and disruption, and threatened illness and death, especially among vulnerable populations (CDC, 2020b). Hobfoll (2012) posits that people of color are at greater risk of emotional distress during disasters than their White counterparts because of disadvantages in obtaining and maintaining resources across the life course necessary to cope with and recover from disaster-related stressors, as has been uncovered by the COVID-19 pandemic (CDC, 2020b; Garcia et al., 2020).

Disaster-Related Stressors and Emotional Distress

Exposure to acute and chronic stressors during disasters has negative consequences for mental health, leading to depression and anxiety (Bonanno et al., 2007; McEwen, 2009). Large-scale disasters present stressors that differentially impact the emotional well-being of vulnerable individuals, including older persons of color. This study focuses on four types of current and future-oriented threats: income, housing, health care, and food insecurity stressors. Within the COR framework, each stressor represents a resource loss to which many older persons of color have more difficulty recovering as compared to older White persons due to lifelong challenges in accumulating resources rooted in racial inequity.

Income and Housing Stressors

Disrupted economic resources during a disaster reduce access to other resources, such as food, health care, and

personal security. Threats to loss of shelter and income have led to depression and anxiety during past crises (Brown et al., 2017). In the general population, older persons are more likely to own their homes and be less dependent on employment income. However, older persons of color are more likely to be working in later life, rent their home, and/or live in a multigenerational household that pools economic resources (Garcia et al., 2020). Older persons of color may be emotionally more susceptible to resource-loss stressors during the pandemic than their White counterparts.

Access to Health Care Stressors

Lack of access to health care during and after a disaster increases stress and emotional distress, elevating the risk of other mental health problems, physical health deterioration, and mortality (Collins et al., 2013). Constraints on access to health care during a disaster could result from health care systems making decisions to focus on specific types of illnesses, or from decisions of persons in need of care to avoid pursuing care. Older adults' greater need for health care increases their vulnerability, which is magnified among communities of color that lack adequate access to health care (Garcia et al., 2020).

Food Insecurity Stressors

During disasters, food supply chains are disrupted, some types of food become scarce, and food costs increase. A sizable number of older adults face food insecurity, either occasionally or every day, which is exacerbated among poorer communities and communities of color following a disaster (Clay & Ross, 2020). As food insecurity is associated with depression (Maynard et al., 2018), lack of access to sufficient food and the expectation of food insecurity are especially toxic stressors.

Race–Ethnic Group Mental Health Disparities During Disasters

Research findings on race–ethnic disparities in mental health outcomes following disasters are equivocal. In a study of the aftermath of Hurricane Katrina in New Orleans, Black persons reported significantly more sleeplessness, depression, and worries than White persons (Adeola, 2009). Conversely, Adams and Boscarino (2005) did not find differences in psychological outcomes between White, Latino, and African American persons 1 year following the World Trade Center terrorist attack. Differences in findings likely result from the unique nature of the disasters, geographic location of the events, and differences in research designs. We know relatively little about the impact of large-scale disaster stressors and emotional health among older persons of color.

Differences between minority race–ethnic groups are expected regarding resource loss, resource recovery, and emotional distress stemming from disaster-specific stressors (Ayalon & Gum, 2011). Black older persons experienced a long history of racial and systemic discrimination in the United States, beginning with more than 200 years of slavery, post-Civil War Jim Crow laws, and pervasive colorism. The reception and treatment of Latino and Asian persons in the United States varied over time, witnessed in the historic changes in immigration law. Older Latino and Asian persons who immigrated to the United States face challenges associated with xenophobia and citizenship in addition to language and cultural discrepancies (Treas & Batalova, 2009). Asian persons are perceived as benefitting from their education in ways that other minority groups have not, allowing many Asian persons to obtain material capital to help cope with prejudice and discrimination, thus providing them with resources necessary to cope with disasters; this perspective is contested as a model minority myth that masks the inequalities among diverse Asian race–ethnic groups (Le et al., 2020). Asian persons also experienced heightened discrimination during the pandemic as COVID-19 disease origins led to scapegoating (Le et al., 2020). Each race–ethnic group has a different history of race-based maltreatment and discrimination, which are expected to be revealed in race–ethnic group differences regarding emotional distress during the pandemic.

The Current Study

We take advantage of the HPS to examine emotional distress among a diverse group of older adults within the context of the COVID-19 pandemic. Because this study examines these issues during the disease spread, the results from this study establish a baseline for other researchers to build upon. Drawing from COR theory and past research, this study examines both current resource losses and expectations of future resource losses. The research hypotheses include:

H1: Older adults who experience COVID-19 stressors will have more emotional distress than older adults who do not experience these stressors.

H2: The associations between emotional distress and COVID-19 stressors will be stronger for older persons of color than for older non-Hispanic White persons, especially among older Black and Latino adults.

Method

Data

Data from the HPS (Fields et al., 2020) were analyzed for a pooled 3-week observation period in May 2020. Beginning April 23, 2020, the U.S. Census Bureau conducted the HPS as a weekly household survey, collecting information on employment loss, spending

patterns, food security, access to health care, housing, educational disruption, and physical and mental wellness. An internet survey link was sent to an email address for one respondent per household.

The HPS was unique and we were not aware of any other national survey that provided information necessary to address the study objectives. The HPS response rate was low, not exceeding 5% in a given week, likely due to the experimental nature of the survey and inability to follow-up with nonrespondents. However, the Census Bureau generated sample base weights to adjust for (a) survey nonresponse, (b) number of adults in the housing units, (c) national distribution of occupied housing units, and (d) demographics of the respondent to known distributions relating to educational attainment, sex, age, and race–ethnicity (Fields et al., 2020, p. 6). The analyses were conducted with the respondent base sample weights.

We examined data from survey Weeks 3, 4, and 5 (May 7 to May 28, 2020). These weeks offered consistent measures and a larger, stable sample size across time compared to Weeks 1 and 2. This study included respondents aged 55 years and older who provided complete information on emotional distress. Each respondent was allowed to participate for a maximum of 3 weeks; however, only 18% actually participated across the 3-week study period. Thus, we included the first response of each respondent, creating a pooled cross-sectional sample (*N* = 94,550).

Measures

Emotional distress
Four items of emotional distress were included in the HPS and were taken from the Patient Health Questionnaire and the Generalized Anxiety Disorder Scale. Respondents were asked how often they were bothered by "feeling nervous, anxious, or on edge," "not being able to stop or control worrying," "having little interest or pleasure in doing things," and "feeling down, depressed, or hopeless" in the last 7 days (1 = *not at all*, 2 = *several days*, 3 = *more than half the days*, 4 = *nearly every day*). Mean scores were calculated across the four items (range = 1–4, Cronbach's alpha = .90).

Race–ethnic group
Four dichotomous variables distinguished respondents' race–ethnic status: (a) non-Hispanic White (reference group), (b) non-Hispanic Black, (c) non-Hispanic Asian, and (d) Latino (or Hispanic), any race. The race–ethnic groups are based on available information in the HPS; however, such broad groups did not capture differences between ethnic subgroups (e.g., Black Caribbean, Southeast Asian). The weighted distributions were 67.7% non-Hispanic White, 13.8% non-Hispanic Black, 4.4% non-Hispanic Asian, and 14.2% Latino. Approximately 3.3% of the sample reported another race (e.g., Native American) or

multiple races; due to small size, these groups are excluded from the analysis.

COVID-19 stressors
Respondents reported whether anyone in their household had suffered a loss in employment income since March 13 (1 = *yes*, 0 = *no*), and whether they expected anyone in their household to suffer a loss of employment income in the next 4 weeks (1 = *yes*, 0 = *no*). Respondents reported whether the household made the last rent or mortgage payment on time (1 = *did not pay on time*, 0 = *paid on time*), and whether they had confidence in their rent or mortgage being paid on time when next due (1 = *no/slight confidence*, 0 = *moderate/high confidence*). Respondents reported whether they delayed or skipped medical care in the past 4 weeks due to the COVID-19 pandemic (1 = *delayed or skipped medical care*, 0 = *did not delay or skip medical care*). No information was available on expectations regarding future medical care access. Finally, respondents reported food insecurities through whether their household had enough food to eat in the last 7 days (1 = *sometimes/often not enough to eat*, 0 = *enough to eat*), and how confident they were that the household could afford the kinds of food needed over the next 4 weeks (1 = *not at all/somewhat confident*, 0 = *moderately/ very confident*).

Covariates
Age was coded into groups (1 = *55–64 years* [reference group], 2 = *65–74 years*, and 3 = *75 years and older*). Gender (1 = *female*, 0 = *male*), marital status (1 = *married*, 0 = *not married*), and education (1 = *less than high school* [reference group], 2 = *high school*, 3 = *some college*, 4 = *had a college degree*) were included. Living arrangements was coded into three categories (1 = *lived alone* [reference group], 2 = *lived with others, no children present*, and 3 = *lived with others, children present*). Household income before taxes in 2019 (1 = *<$25,000* to 6 = *≥$100,000*) and self-rated health (1 = *fair/poor*, 0 = *good/very good/excellent*) were included. We included variables to indicate the survey week (1 = *week 3* [reference group], 2 = *week 4*, and 3 = *week 5*).

Analytic Strategy

We conducted descriptive analyses for the study sample. We then employed multiple linear regression to examine the relationships between each set of COVID-19 stressors and emotional distress (Hypothesis 1). We further conducted multiple group analysis to estimate the relationships between each set of COVID-19 stressors and emotional distress for each race–ethnic group simultaneously (Hypothesis 2). The multiple group analysis consists of a two-step process. First, the relationships among variables within each race–ethnic group are analyzed (unconstrained

model). Second, within-race-group coefficients from Step 1 are evaluated to determine whether coefficients are significantly different when compared to a reference group (White persons; constrained model). By constraining the specific paths to be equal across groups, we were able to test for cross-group differences. Wald test chi-squared estimates and *p*-values were used to determine whether the effects of COVID-19 stressors on emotional distress were significantly different between each race–ethnic minority group and the non-Hispanic White group (Muthén & Muthén, 2017). Fit indices and corresponding threshold values were employed to assess model fit: chi-squared test statistic, Tucker Lewis index, and comparative fit index higher than 0.95, and root mean square error of approximation and standardized root mean square residual lower than 0.05 (Kline, 2011). The multiple group regression technique is an alternative to employing interaction terms composed of key theoretically important independent variables. Missing cases were addressed with the Full Information Maximum Likelihood method, which estimates model parameters based on all available data,

providing robust estimates (Wu et al., 2009). All analyses were conducted using *Mplus* 7.4.

Results

Descriptive characteristics are provided in Table 1. The mean emotional distress level is 1.8 (*SD* = 0.9, range = 1–4), indicating moderately low emotional distress during the previous week. For respondents' households, 38% lost income in the previous week and 30% expected to lose income in the future. Nearly half of respondents delayed or skipped medical care (47.1%). More than one in 10 (11.3%) people lived in households that did not pay their last rent or mortgage on time, and 15% reported no or low confidence that they would be able to pay their rent or mortgage next month. Food insecurity in the previous week was reported by 6.8% of respondents and more than a quarter (26.7%) expected to experience food insecurity in the next month.

Although the differences are small, mean levels of emotional distress were significantly greater for older

Table 1. Summary Statistics of the PULSE Study Sample

Variables	Full sample	Non-Hispanic White	Non-Hispanic Black	Non-Hispanic Asian	Latino
Emotional distress (*M/SD*)	1.8 (0.9)	1.7 (0.8)	**1.8 (0.8)**	**1.8 (0.8)**	**2.1 (0.9)**
Current COVID-19 stressors					
Recent household income loss	38.0	34.2	**43.5**	**44.9**	**51.9**
Did not pay rent/mortgage on time	11.3	7.7	**18.2**	**10.8**	**19.0**
Delayed or skipped medical care	47.1	46.8	46.5	43.3	**50.5**
Food insecurity last week	6.8	4.0	**11.7**	**5.3**	**15.8**
Expected COVID-19 stressors					
Expect household income loss	30.0	24.8	**35.4**	**38.7**	**44.6**
Low confidence next rent/mortgage payment	15.0	8.9	**22.8**	**17.5**	**31.2**
Expect food insecurity next month	26.7	20.0	**45.3**	**25.4**	**41.3**
Age 55–64	46.6	43.4	**55.2**	**56.4**	**50.2**
Age 65–74	39.4	41.2	**37.9**	**33.4**	**34.3**
Age 75–88	14.0	15.4	**6.9**	**10.3**	15.4
Female	55.2	55.1	**57.0**	**52.1**	54.5
Married	62.3	66.9	**46.0**	**70.8**	**55.4**
Less than high school	11.4	6.0	**12.3**	**18.9**	**34.0**
High school	37.9	40.8	**36.8**	**18.0**	**31.4**
Some college	26.9	27.8	**30.3**	**20.7**	**21.1**
Had a college degree	23.8	25.4	**20.6**	**42.4**	**13.6**
Household income <$25,000	14.3	11.9	**23.4**	**12.2**	**25.5**
Household income $25,000–49,999	24.8	25.3	**32.6**	**20.2**	**31.0**
Household income $50,000–74,999	17.7	20.1	**19.0**	**16.9**	**15.9**
Household income $75,000–99,999	12.7	14.9	**10.8**	**12.8**	**11.6**
Household income ≥$100,000	22.8	27.8	**14.3**	**37.9**	**15.9**
Fair/poor self-rated health	23.3	19.9	**31.0**	**17.0**	**34.1**
Lived alone	10.5	11.3	**11.7**	**5.6**	**7.5**
Lived with others, no children present	71.5	74.6	**63.0**	73.3	71.5
Lived with others, children present	28.0	14.2	**25.3**	**21.0**	**28.2**

Notes: COVID-19 = coronavirus disease 2019. *N* = 94,550. Analyses based on weighted data. Statistically significant differences (*p* < .05) between the non-Hispanic White group and each race–ethnic group are presented in **bold**.

non-Hispanic Black persons (hereafter, Black persons), non-Hispanic Asian persons (hereafter, Asian persons), and Latino persons compared to non-Hispanic White persons (hereafter, White persons). Statistically significant differences comparing older Black, Asian, and Latino persons to older White persons are presented in bold in Table 1 ($p < .05$; t test and chi-squared coefficients are given in Supplementary Table 1). A significantly higher percentage of older persons of color lost income, expected to lose more income, did not pay rent or mortgage on time, and expected not to be able to pay their future housing bills on time compared to older White persons. Older Black persons reported nearly three times as much food insecurity and older Latino persons reported nearly four times as much food insecurity in the previous week when compared to older White persons. Older Black and Latino persons reported twice the level of expected future food insecurity as older White persons; older Asian persons reported slightly higher expectations of food insecurity than White persons. Regarding percent of respondents who delayed or skipped medical care, older Black persons showed similar rates, older Asian persons showed lower rates, and older Latino persons showed higher rates compared to older White persons.

COVID-19 Stressors and Emotional Distress

Key results addressing the first hypothesis are reported in Table 2, which highlighted specific COVID-19 stressors and race–ethnic group identifiers (see Supplementary Table 2 for full results). Older adults who reported income loss ($B = 0.10$, $SE = 0.02$) and who expected to have future income loss ($B = 0.27$, $SE = 0.02$) had higher levels of emotional distress than older adults who did not experience these stressors (panel A). Older adults who did not pay their rent or mortgage ($B = 0.15$, $SE = 0.05$) and those who had no or low confidence that they would be able to do so in the future ($B = 0.34$, $SE = 0.04$) had higher levels of emotional distress than older adults not exposed to these stressors (panel B). Notably, for the income and housing payment stressors, the effect for expectations of loss was more than twice as large as compared to recent losses. Respondents who delayed or skipped medical care had higher levels of emotional distress than respondents not exposed to this stressor ($B = 0.35$, $SE = 0.02$, panel C). Older adults with recent food insecurity ($B = 0.50$, $SE = 0.06$) and who expected future food insecurity ($B = 0.41$, $SE = 0.02$) had higher levels of emotional distress than those who did not (panel D). The effect for current food insecurity was stronger than the effect for expectation of future food insecurity.

Compared to older White persons, older Black persons reported lower levels of emotional distress, older Asian persons reported similar levels of emotional distress, and older Latino persons reported higher levels of emotional distress in relation to COVID-19 stressors. However, in relation

Table 2. Multiple Linear Regression Analyses for Emotional Distress With COVID-19 Stressors and Race–Ethnic Group Status

Panel	Stressors and race–ethnic variables	B	SE
A	Recent household income loss	0.10***	0.02
	Expects household income loss	0.27***	0.02
	Black	−0.10***	0.03
	Asian	0.04	0.04
	Latino	0.10**	0.04
B	Did not pay rent/mortgage on time	0.15**	0.05
	Low confidence next payment	0.34***	0.04
	Black	−0.12***	0.03
	Asian	0.05	0.05
	Latino	0.09*	0.04
C	Delayed or skipped medical care	0.35***	0.02
	Black	−0.07**	0.03
	Asian	0.10*	0.05
	Latino	0.15***	0.04
D	Food insecurity last week	0.50***	0.06
	Expect food insecurity next month	0.41***	0.02
	Black	−0.16***	0.02
	Asian	0.06	0.04
	Latino	0.09*	0.04

Notes: COVID-19 = Coronavirus Disease - 2019. $N = 94,550$. B = unstandardized beta coefficient. Analyses based on weighted data. For each model, covariates included age, gender, marital status, education, living arrangements, household income in 2019, self-rated health, and survey week indicator.
*$p < .05$. **$p < .01$. ***$p < .001$.

to delayed or skipped medical care, older Asian persons showed higher levels of emotional distress than older White persons.

Multiple Race–Ethnic Group Analysis Results

Multiple group analysis results addressing the second hypothesis about race–ethnic group differences in the associations between COVID-19 stressors and emotional distress are reported in Table 3. Bolded coefficients indicated statistically significant differences in effect sizes comparing older Black, Asian, and Latino persons to older White persons ($p < .05$; see Supplementary Tables 3–6 for full results). While the strength of current income loss and housing stressors did not significantly differ between race–ethnic groups, expectations of experiencing these stressors in the future showed significant variations by race–ethnic group comparison. The relationship between expected household income loss and emotional distress was significantly larger for older Latino persons than for older White persons ($B = 0.39$, $SE = 0.08$ and $B = 0.21$, $SE = 0.02$, respectively). The association between confidence in future

Table 3. Multiple Group Analysis for Emotional Distress and COVID-19 Stressors Within Race–Ethnic Group

Model	Stressor variables	Non-Hispanic White (n = 80,553)		Non-Hispanic Black (n = 5,718)		Non-Hispanic Asian (n = 2,908)		Latino (n = 5,371)		χ^2 (df)	CFI	TLI	RMSEA	SRMR
		B	SE	B	SE	B	SE	B	SE					
A	Recent household income loss	0.11***	0.02	0.06	0.06	−0.02	0.11	0.11	0.08					
	Expects household income loss	0.21***	0.02	0.31***	0.06	0.32**	0.09	**0.39*****	0.08					
	Model fit indices									226.3 (128)	0.97	0.98	0.01	0.01
B	Did not pay rent/mortgage on time	0.18***	0.04	0.14	0.09	0.18	0.10	0.13	0.14					
	Low confidence next payment rent	0.48***	0.04	**0.29*****	0.08	0.29**	0.11	**0.24***	0.11					
	Model fit indices									215.6 (128)	0.97	0.98	0.01	0.01
C	Delayed/skipped medical care	0.33***	0.01	0.32***	0.05	**0.16***	0.07	**0.48*****	0.07					
	Model fit indices									200.8 (120)	0.98	0.99	0.01	0.01
D	Food insecurity last week	0.47***	0.05	0.49***	0.09	**0.03**	0.19	**0.58*****	0.11					
	Expects food insecurity	0.46***	0.02	**0.31*****	0.05	0.48***	0.09	0.35***	0.08					
	Model fit indices									222.3 (128)	0.97	0.98	0.01	0.01

Notes: COVID-19 = Coronavirus Disease - 2019. *B* = unstandardized beta coefficient. Analyses based on weighted data. Reported sample sizes based on unweighted data. *SE* = standard error. **Bold** font represents statistically significant differences between non-Hispanic Whites and each race-ethnic group. CFI = comparative fit index, TLI = Tucker Lewis index, RMSEA = root mean square error of approximation, SRMR = standardized root mean square residual. For each model, covariates included age, gender, marital status, education, living arrangements, household income in 2019, self-rated health and survey week indicator.

*p < .05. **p < .01. ***p < .001.

ability to pay rent or a mortgage and emotional distress was significantly weaker among older Black persons (*B* = 0.29, *SE* = 0.08) and older Latino persons (*B* = 0.24, *SE* = 0.11) compared to older White persons (*B* = 0.48, *SE* = 0.04). The size of the effect between delayed or skipped medical care and emotional distress was lower for older Asian persons (*B* = 0.16, *SE* = 0.07) and higher for older Latino persons (*B* = 0.48, *SE* = 0.07) compared to older White persons (*B* = 0.33, *SE* = 0.01). The relationship between recent food insecurity and emotional distress was not statistically significant for older Asian persons (*B* = 0.03, *SE* = 0.19), while the same relationship for older White persons was significant, reflecting a significant difference between older Asian persons and White persons. For older Black persons, the relationship between expected food insecurity and emotional distress (*B* = 0.31, *SE* = 0.05) was weaker compared to the same relationship for older White persons (*B* = 0.46, *SE* = 0.02). All other comparisons yielded nonsignificant group differences in effect sizes.

Discussion

COVID-19 pandemic stressors adversely affected older adults' emotional well-being, but the pattern of results by race–ethnic group was complex. Drawing from COR theory, we expected that resource losses resulting from the COVID-19 pandemic would be related to increased emotional distress, with expectations of future losses expected to be equally, if not more, distressing than current losses. COR theory posited that people who had fewer resources before the pandemic were more vulnerable to emotional distress because of their disadvantaged ability to maintain and recover lost resources. The history of race–ethnic disparities in resource access and accumulation were revealed in the pandemic's disproportionate outcomes among older persons of color with respect to the mean levels of emotional distress. This study found that exposure to four pandemic-invoked stressors was related to higher levels of emotional distress among older adults and in specific cases, older persons of color were more impacted than their White counterparts while in other cases, older persons of color fared better than older White persons.

Hypothesis 1

Our first hypothesis that COVID-19 stressors would be associated with higher levels of emotional distress among older adults was supported (Bonanno et al., 2007), affirming the basic tenets of COR theory (Hobfoll & Lilly, 1993). Current food insecurity and delayed/skipped medical care had the strongest associations with elevated emotional distress, which was plausible as the pandemic began with people panic-buying food and supplies, along with fear of overcrowded and unsafe exposure associated with visiting hospitals and health care settings. The relatively small

percentage of respondents who did not pay their recent rent or mortgage (11.6%) may be due to a lagged effect of the pandemic on unemployment and related loss of household income, and to confidence in federal and state eviction moratoria policies. Future policies regarding moratoria on evictions should consider the long-term impact of household income instability, including households with older persons of color (Black and Latino) as these groups showed higher rates of not paying rent or mortgages on time.

Also, consistent with COR theory, expectations regarding future inability to recover lost economic resources in the future (household income, ability to pay rent/mortgage) showed stronger effects than current loss of these resources (this was not the case for food insecurity, where current food insecurity had a stronger effect than expectations about future food insecurity). These findings for expected financial insecurities may be due to delayed economic effects of the pandemic, in that older adults were depleting their resource reservoirs at the beginning of the pandemic and had few or no resources for future recovery. Many respondents were still working for pay or providing care for others, which may impact emotional distress. Future research should explore whether race–ethnic group differences exist in the relationship between these responsibilities and emotional health during the pandemic (no information on current work status was available in the HPS).

The average level of emotional distress for all the race–ethnic groups examined was moderate to low. However, the bivariate results showed that emotional distress was higher for all minority race–ethnic groups compared to the older White group, supporting COR theory propositions that more vulnerable groups would be exposed to higher risk of emotional distress. Interestingly, older Asian persons fared similar to older White persons with respect to emotional distress as related to COVID-19 stressors associated with recent housing payment struggles, delayed/skipped medical care, and food insecurity (but not income loss). Older Asian persons had higher mean incomes and education than any other race–ethnic group; these resources likely helped offset the distress associated with exposure with housing, medical care, and food COVID-19 stressors.

Older Latino persons reported higher emotional distress in relation to specific COVID-19 stressors than older White persons. This finding may be related to the fact that older Latino persons reported the highest percentage living in multigenerational households, and the second highest percentage with an annual household income less than $25,000, suggesting that this group could have more people in the household at risk while having fewer resources to cope with the pandemic. Older Latino immigrants often did not speak English well, increasing risk of social isolation, and Latino immigrant households were more likely than nonimmigrant households to have members working in the front lines, increasing stressors linked to emotional distress. These patterns may reflect older Latino persons' emotional

vulnerability to exhausting limited resources and living with family members who worked as employees in low-wage "essential" services, with the concomitant heightened risk of contracting the disease (Fortuna et al., 2020). The Latino group had the highest percentage self-reporting fair or poor health; the impact of delaying or skipping medical care had a stronger relationship with emotional distress for older Latino persons than for older White persons because the need for medical care was likely greater.

In contrast, older Black persons showed less emotional distress than older White persons in relation to specific COVID-19 stressors. Although these results did not support COR theory, the findings were consistent with previous research that showed Black persons report less emotional distress than White persons across the life course despite facing more adversity, referred to as the "Black mental health paradox" (Kysar-Moon, 2020). No consensus about the origin of this paradox exists; some possibilities include benefits of racial identity, strong kin networks, high levels of social support, and religious identity (Kysar-Moon, 2020, p. 137). Although older Black persons reported experiencing significantly higher rates of COVID-19 stressors than older White persons, their comparably lower rates of emotional distress, once other characteristics were taken into account, could indicate resilience developed from coping with adversities over the life course, often stemming from racial discrimination and inequitable opportunities (Lee et al., 2009). The concept of resilience is not without controversy, as this concept may yield a form of internalized oppression, in part because not all Black persons have the coping skills to respond to the negative experiences associated with racism and racial inequality. Future research should examine this issue more closely.

Hypothesis 2

The hypothesis that older persons of color would suffer more emotional distress from the COVID-19 stressors as compared to older White persons after controlling background characteristics received only partial support, and thus, only partially supporting COR theory. Although the direction of the relationships was the same for all four groups, only some of the differences comparing minority race–ethnic groups with the White group were statistically significant. When confronted with expectations about future loss of income and delayed or skipped medical care, older Latino persons' emotional health was more negatively impacted compared to older White persons. However, older White persons were more emotionally distressed than older Black and Asian persons with respect to recent and expected food insecurity. This unexpected result is possibly related to underlying health conditions and other factors that we were unable to control (e.g., community characteristics). The strength of the effect of uncertainty about future ability to pay rent/mortgages on emotional distress was greater for older White persons than for older Black

and Latino persons. Another potential explanation for older White persons suffering emotionally more than older persons of color could be that older White persons may have benefitted from racial privilege in the past and did not experience these stressors earlier in life, and thus, their emotional response was more sensitive to the pandemic. Older persons of color were more likely to have experienced these stressors over their lives, developing coping strategies (Ayalon & Gum, 2011).

This study's findings had implications for future research and policy development. For example, other individual characteristics may intersect with race–ethnic group status to impact emotional well-being during disasters. We also examined the main effect of age for emotional distress among all race–ethnic groups (see Supplementary Tables 3–6). For older White persons, the negative effect of age for emotional distress increased monotonically, suggesting a potential protective effect among older age groups, which was consistent with the recent work of Klaiber and colleagues (2020). In contrast, for older Latino persons, although not statistically significant, the main effect of age was positively associated with emotional distress, indicating a potential detrimental effect of age for the older Latino group. For older Black persons, emotional distress was lower for the older age groups, but the effects were about the same magnitude (not increasing monotonically with advancing age). The negative main effect of age for older Asian persons' emotional distress levels off at the 65–74 age group, with no additional benefit found for the 75+ age group. In sum, whether increasing age is protective for emotional distress depends on which race–ethnic group is highlighted.

The between-race–ethnic group differences for the relationship between age and emotional distress are inconsistent and relatively minor. Compared to older White persons, the effect of age for emotional distress is less important for older Latino persons. There are no statistically significant older Black–White differences with regard to the effects of age. In two of the four models for COVID-19 stressors, the effect of age group is stronger for older Asian persons than for older White persons. In conclusion, age is not protective for all race–ethnic groups and has different effects at different points in the age distribution. The between race–ethnic group analysis showed that age effects are not significantly different when White persons are the comparison group. Future research should more thoroughly explore these issues, including examining the intersection between race–ethnic group status and other characteristics, like gender, social class, and religiosity.

The "Black Lives Matter" social justice movement is concurrently spreading across the United States, drawing attention to systemic racism associated with preexisting health conditions, crowded living environments, inability to physically isolate due to work requirements, racial violence, and inequalities in community services; these contribute to ongoing mental health disparities among communities of color, especially Black communities, and

are magnified during the global health crisis (CDC, 2020b). Because of this attention to racism and racial inequality, federal, state and local governments have a window of opportunity, and should prepare to support older persons of color and their families with emergency aid for income support, home eviction moratoria, and food banks. As expectations of stressors were related to greater emotional distress, policies and programs should plan to support older persons of color in securing these basic resources during times of uncertainty. Although federal and state governments attempted to be responsive to the pandemic's consequences through unemployment insurance relief and eviction protection programs, inequitable access to these programs may have left older persons of color vulnerable to emotional distress. When data become available, future research should evaluate if these mitigation programs had the desired outcome across race–ethnic groups.

The HPS had a low response rate. Even with the complex sample weights applied, the sample was likely not representative of the U.S. population of older adults. The sample was healthier, had higher income and education, and was more likely to reside in urban areas. The HPS was an experimental survey design based on the Census Bureau's master address file, which was a strength of the study. However, because the data were collected and reported quickly to meet the needs of users, there was no possibility of follow-up with nonrespondents. Also, the reliance on internet survey methodology meant those without access to the internet could not participate. Relatedly, because the sample is likely healthier than the general population of older adults, some respondents may have felt more comfortable skipping or delaying medical care. The HPS did not have indicators on conventional employment status, social support, detailed family and living arrangements, predisaster health information, and community characteristics, all of which may be related to emotional distress. The issues identified above serve as barriers to making causal statements. Furthermore, the data structure limited our ability to study the Native American population and subgroups within the Asian population. Our results did not speak to the negative experiences and emotional distress among these populations.

Despite these limitations, this study contributed to the literature on emotional health among older adults living through a global health crisis by examining near real-time data from the HPS. The study showed that COVID-19 stressors had negative associations with older adults' mental health, and in some cases, these associations were stronger for older persons of color. This study's findings showed that expectations of future resource loss could be more distressing than experiencing current resource loss, supporting COR theory. As the COVID-19 pandemic is a unique rolling disaster in which people are uncertain of when it will end, when life conditions will stabilize, or what consequences will come next, it is important that policies and programs proactively reduce disruption of resources among households, including those of older persons of color.

Supplementary Material

Supplementary data are available at *The Gerontologist* online.

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Conflict of Interest

References

Adams, R. E., & Boscarino, J. A. (2005). Differences in mental health outcomes among Whites, African Americans, and Hispanics following a community disaster. *Psychiatry*, **68**(3), 250–265. doi:10.1521/psyc.2005.68.3.250

Adeola, F. O. (2009). Mental health & psychosocial distress sequelae of Katrina: An empirical study of survivors. *Human Ecology Review*, **16**(2), 195–210. http://www.humanecologyreview.org/pastissues/her162/adeola.pdf

Ayalon, L., & Gum, A. M. (2011). The relationships between major lifetime discrimination, everyday discrimination, and mental health in three racial and ethnic groups of older adults. *Aging & Mental Health*, **15**(5), 587–594. doi:10.1080/13607863.2010.543664

Bonanno, G. A., Galea, S., Bucciarelli, A., & Vlahov, D. (2007). What predicts psychological resilience after disaster? The role of demographics, resources, and life stress. *Journal of Consulting and Clinical Psychology*, **75**(5), 671–682. doi:10.1037/0022-006X.75.5.671

Brown, R. L., Richman, J. A., & Rospenda, K. M. (2017). Economic stressors and psychological distress: Exploring age cohort variation in the wake of the great recession. *Stress and Health*, **33**(3), 267–277. doi:10.1002/smi.2705

Center for Disease Control and Prevention (CDC). (2020a, July 1). *Demographic trends of COVID-19 cases and deaths in the US reported to CDC*. http://www.cdc.gov/covid-data-tracker/index.html#demographics

Center for Disease Control and Prevention (CDC). (2020b, June 26). *Covid-19 in racial and ethnic minority groups*. http://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/race-ethnic-minorities.html

Clay, L. A., & Ross, A. D. (2020). Factors associated with food insecurity following Hurricane Harvey in Texas. *International Journal of Environmental Research and Public Health*, **17**(3), 762–778. doi:10.3390/ijerph17030762

Collins, T. W., Jimenez, A. M., & Grineski, S. E. (2013). Hispanic health disparities after a flood disaster: Results of a population-based survey of individuals experiencing home site damage in El Paso (Texas, USA). *Journal of Immigrant and Minority Health*, **15**(2), 415–426. doi:10.1007/s10903-012-9626-2

Fields, J. F., Hunter-Childs, J., Tersine, A., Sisson, J., Parker, E., Velkoff, V., Logan, C., & Shin, H. (2020, June 5). *Design and operation of the 2020 Household Pulse Survey, 2020.* U.S. Census Bureau. http://www2.census.gov/programs-surveys/demo/technical-documentation/hhp/2020_HPS_Background.pdf

Fortuna, L. R., Tolou-Shams, M., Robles-Ramamurthy, B., & Porche, M. V. (2020). Inequity and the disproportionate impact of COVID-19 on communities of color in the United States: The need for a trauma-informed social justice response. *Psychological Trauma: Theory, Research, Practice and Policy*, **12**(5), 443–445. doi:10.1037/tra0000889

Garcia, M. A., Homan, P. A., García, C., & Brown, T. H. (2020). The color of COVID-19: Structural racism and the pandemic's disproportionate impact on older racial and ethnic minorities. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*. Advance online publication. doi:10.1093/geronb/gbaa114

Gauthier, G. R., Smith, J. A., García, C., Garcia, M. A., & Thomas, P. A. (2020). Exacerbating inequalities: Social networks, racial/ethnic disparities, and the COVID-19 pandemic in the United States. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*. Advance online publication. doi:10.1093/geronb/gbaa117

Hobfoll, S. E. (2012). Conservation of resources and disaster in cultural context: The caravans and passageways for resources. *Psychiatry*, **75**(3), 227–232. doi:10.1521/psyc.2012.75.3.227

Hobfoll, S. E., & Lilly, R. S. (1993). Resource conservation as a strategy for community psychology. *Journal of Community Psychology*, **21**(2), 128–148. doi:10.1002/1520-6629(199304)21:2<128::AID-JCOP2290210206>3.0.CO;2-5

Klaiber, P., Wen, J. H., DeLongis, A., & Sin, N. L. (2020). The ups and downs of daily life during COVID-19: Age differences in affect, stress, and positive events. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, **76**(2), e30–e37. doi:10.1093/geronb/gbaa096

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). The Guilford Press.

Kysar-Moon, A. (2020). Childhood adversity and internalizing problems: Evidence of a race mental health paradox. *Society and Mental Health*, **10**(2), 136–162. doi:10.1177/2156869319843325

Le, T. K., Cha, L., Han, H. R., & Tseng, W. (2020). Anti-Asian xenophobia and Asian American COVID-19 disparities. *American Journal of Public Health*, **110**(9), 1371–1373. doi:10.2105/AJPH.2020.305846

Lee, E. O., Shen, C., & Tran, T. V. (2009). Coping with Hurricane Katrina: Psychological distress and resilience among African American evacuees. *Journal of Black Psychology*, **35**(1), 5–23. doi:10.1177/0095798408323354

Maynard, M., Andrade, L., Packull-McCormick, S., Perlman, C. M., Leos-Toro, C., & Kirkpatrick, S. I. (2018). Food insecurity and mental health among females in high-income countries. *International Journal of Environmental Research and Public Health*, **15**(7), 1424–1459. doi:10.3390/ijerph15071424

McEwen, B. S. (2009). Protection and damage from acute and chronic stress: Allostasis and allostatic overload and relevance to the pathophysiology of psychiatric disorders. *Annals of the New York Academy of Sciences*, **1032**(1), 1–7. doi:10.1196/annals.1314.001

Muthén, L. K., & Muthén, B. (2017). *Mplus user's guide* (8th ed.). Muthén & Muthén.

Pfefferbaum, B., & North, C. S. (2020). Mental health and the Covid-19 pandemic. *The New England Journal of Medicine*, **383**(6), 510–512. doi:10.1056/NEJMp2008017

RAND Corporation. (2020, December 6). *How are Americans paying their bills during the COVID-19 pandemic?* https://www.rand.org/pubs/research_reports/RRA308-3.html?ftag=MSFd61514f#fn2

Treas, J., & Batalova, J. (2009). Immigrants and aging. In P. Uhlenberg (ed.), *International handbook of population aging* (pp. 365–394). Springer. doi:10.1007/978-1-4020-8356-3_16

U.S. Census Bureau. (2020, July 7). *Weekly Census Bureau Survey provides timely info on households during COVID-19 pandemic.* http://ww.census.gov/library/stories/2020/05/new-household-pulse-survey-shows-concern-over-food-security-loss-of-income.html

Wu, W., West, S. G., & Taylor, A. B. (2009). Evaluating model fit for growth curve models: Integration of fit indices from SEM and MLM frameworks. *Psychological Methods*, **14**(3), 183–201. doi:10.1037/a0015858