

# Racial and Ethnic Disparities: Essential Workers, Mental Health, and the Coronavirus Pandemic\*

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**Abstract:** It is clear that the pandemic is disproportionately impacting communities of color. This study investigates mental health distress among essential workers during the Coronavirus pandemic across race and ethnicity. We evaluate individual responses to the Patient Health Questionnaire and General Anxiety Disorder Questionnaire using a unique, nationally representative data set. Our findings suggest that essential healthcare workers reported the highest rates of mental health distress at the beginning of the Coronavirus pandemic. However, when evaluated across race and ethnicity, we find that Black essential healthcare workers disproportionately report symptoms of anxiety; while, Hispanic essential healthcare workers disproportionately report symptoms of depression. Additionally, we find that being a Black or Hispanic essential non-healthcare worker is associated with higher levels of distress related to anxiety and depression. These findings highlight the additional dimensions to which Black and Hispanic Americans are disproportionately affected by the Coronavirus pandemic. Furthermore, it calls into question how the essential worker classification, compounded by US unemployment policies, is potentially amplifying the mental health trauma experienced by workers.

*Keywords: Social Determinants of Health, Essential Workers, Mental Health, Coronavirus Pandemic*

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# 1 INTRODUCTION

The Coronavirus pandemic has resulted in a great loss at all levels of society. However, like most catastrophes, those who face the most significant loss are the vulnerable, marginalized, and historically oppressed (Galea, 2020). States that were first to track the race and ethnicity of those infected by the virus have reported a staggering disproportion of deaths within Black and Hispanic communities. For example, reports from Louisiana revealed that while Blacks account for 32-percent of the state’s population, they account for 70-percent of the deaths attributable to the Coronavirus (Louisiana Office of Public Health, 2020). To add, Black and Hispanics are disproportionately employed in what is outlined as essential front-line industries (Rho, Hye and Brown, Hayley and Fremstad, Shawn , 2020). As state and federal governments begin an effort to reopen the economy, there has been a push to suppress social safety net programs such as unemployment insurance and the healthcare exchange.

Policies established to confront the pandemic, particularly those stipulating the “essential worker,” may have played a factor in Coronavirus cases’ racial and ethnic disparities. The essential worker, as a re-imagined class of employee, is stratified along with industry type. This stratification is systemic and has been established at all government levels, leaving non-healthcare essential workers with few protections against Coronavirus exposure in the workplace (Grabell et al., 2020). These conditions implicate the physical and mental health of essential workers (Morganstein, 2020). In this study, we investigate the disparities in mental health distress, across race and ethnicity, among those who continue to work through the pandemic.

We leverage a unique survey data set designed to track the American people’s well-being through the pandemic. Our analysis investigates the racial and ethnic disparities in mental health distress among essential and non-essential workers. We find that being a Black or Hispanic essential non-healthcare worker is associated with higher mental health distress levels related to anxiety and depression. Conversely, the results for Black and Hispanic essential health care workers is mixed.

This study confirms that the Coronavirus pandemic has impacted most Americans’ mental health and reveals that Black and Hispanic’s essential workers were disproportionately affected. While the government’s response to the pandemic has stratified essential workers, implicating the economically disadvantaged health and well-being, these strata overlay a deeply embedded socioeconomic system that has historically worked against Blacks and Hispanics. These findings underscore the notion that social distancing during the pandemic is a privilege.

## 1.1 Race and Mental Health

The research focused on racial and ethnic mental health disparities is complex and unsettled (Williams et al., 2017). Early studies suggest that Blacks often report higher psychological distress rates than Whites, while other research suggests the contrary (Dohrenwend and Dohrenwend, 1969; Vega and Rumbaut, 1991; Hughes et al., 2015). Additionally, research has found that Hispanics report lower mental health distress rates relative to Whites (Miranda et al., 2008; Alegria et al., 2018). Research also suggests racial and ethnic minorities under-report mental health distress, lack insurance, receive a lower quality of care, and experience cultural incompetency when receiving care (Fiscella et al., 2000; Bharadwa et al., 2017).

Mental health research has established several explanations on how the constructs of race and ethnicity impact mental health. One explanation focuses on the role of stress and other social contextual factors (Pearlin et al., 2005). For instance, Black and Latina women's unfavorable health outcomes have been linked to everyday discrimination, poverty, structural racism, and social exclusion (Geronimus et al., 2006; Novak et al., 2017). Internalized racism is another pathway by which race and ethnicity constructs can harm mental health among non-Whites (Taylor and Jackson, 1990; Taylor et al., 1991; Paradies et al., 2015; Williams et al., 2017).

The social determinants of mental health (SDMH) is a more recent paradigm that focuses on where people work, play, and live shape their mental health Allen et al. (2014); Organization et al. (2014). This framework provides the link between public policy (e.g., essential worker designations) and mental health outcomes. Given that the relationship between employment policies and mental health is not direct, we utilize the SDMH framework to analyze the mechanisms that provoke mental health distress. A key component in the SDMH rationale is its framing of intermediary factors, such as material circumstances and racial discrimination, which connect sociopolitical contexts to mental health outcomes (Vargas et al., 2017). Through the SDMH framework, we argue that being an essential worker during the Coronavirus pandemic may subjugate workers to undue stress and psychosocial challenges, ultimately leading to poor mental health.

## 1.2 The Coronavirus Pandemic and Race

The research pertaining to major adverse events (e.g., natural disasters, economic recessions, etc.) has built a consensus connecting these events to elevated mental health distress (Galea et al., 2005; Rhodes et al., 2010; Diette et al., 2018). The strain on mental health due to the Coronavirus's public health crises may be especially aggravated among those with elevated risks. A recent study found that non-Hispanic African Americans were almost three times more likely to be hospitalized, relative to Whites, for Coronavirus related

illnesses (Azar et al., 2020). Moreover, during the Coronavirus pandemic, the mortality rate for Black Americans is over two-and-half times higher than that of Whites. In New York City alone, the death rates among Blacks, Hispanics, and Whites were 92.3, 74.3, and 45.2 deaths per 100,000 persons, respectively (Cyrus et al., 2020). The disproportional outcomes in Coronavirus cases across race and ethnicity have cultivated an unjust narrative that attempts to blame personal choice and culture (Kendi, 2020).

Unlike other adverse events, the pandemic’s response has required a substantial portion of the population to social distance; but to continue working through the quarantine. The ability to remain fully employed at home during the pandemic is a privilege not afforded to some of the most economically disadvantaged. Given the guidelines outlining essential industries along with state ran unemployment benefits programs, essential workers are economically bounded to continue working. A rigid, “no fault of your own” approach to unemployment benefits programs leaves healthy essential workers without any economically viable alternatives. However, workers may be hesitant to quit given uncertainties about future job security, even in states that allow benefits for essential workers who quit due to elevated risk of exposure.

The concern is the Coronavirus pandemic’s effect on the risk of unemployment and its link to psychological distress Diette et al. (2018). Historically, Black workers have disproportionately been the first to be fired during adverse events; current unemployment estimates support this notion (Couch and Fairlie, 2010; Montenovio et al., 2020). Therefore, and in addition to the fear of Coronavirus exposure, the risk of unemployment may also affect the mental health of essential workers —particularly, among Blacks and Hispanics. Additionally, mental health distress may be heightened among Blacks and Hispanics, given inadequate health insurance coverage and access to health care (Buchmueller and Levy, 2020; Kirby and Kaneda, 2010).

Recent research has found a sharp increase in mental health distress in areas suffering the most Coronavirus infections (Liu et al., 2020; Qiu et al., 2020). The deleterious mental health effects have disproportionately affected front-line health care workers (Lai et al., 2020; Kang et al., 2020). However, most of the current mental health studies have focused on workers outside the US. Research investigating the pandemic’s impact on mental health across racial and ethnic minorities is scarce —particularly those that are essential non-healthcare workers (e.g. grocery store workers). This distinction is pertinent given that Black and Hispanic workers are overrepresented in professions with relatively lower wages and no employer-provided health insurance (Darity Jr et al., 2018).

## 2 DATA AND METHODS

### 2.1 National Panel Study of Coronavirus pandemic

We investigate racial and ethnic disparities in mental health distress during the Coronavirus pandemic using a unique data set collected from the National Panel Study of COVID-19 (NPSC-19). The NPSC-19 is a multi-wave study designed to track the COVID-19 pandemic impact on the American people in collaboration with researchers across multiple universities.<sup>1</sup> The survey was conducted online by the market research firm Lucid Holdings, LLC, using a nationally representative sample collected from the programmatic sampling marketplace. Initial respondents began participation in early March just as the U.S. declared a national emergency ( $N = 4,000$ ). A follow-up wave was conducted in April, introducing additional survey instruments designed to capture respondents' socioeconomic conditions, mental health, and overall well-being ( $N = 3,338$ ). Data collected in the 2nd wave, from April 10<sup>th</sup> to April 24<sup>th</sup>, are used in our analysis.

While we assume that the probability of respondents being drawn was equal across all U.S. population segments, we correct for any distortions in noncoverage using an iterative proportional fitting procedure (IPFP) adjusted to the Census Bureau's adult population estimates from the 2019 American Community Survey. The IPFP weight was fitted along seven characteristics: 1.) race and ethnicity 2.) gender by age group; 3.) education by age group; 4.) marital status; 5.) gender by race and ethnicity; 6.) age group by race and ethnicity; and 7.) state. Categories were chosen to ensure representation across race and ethnicity; and, is the same approach used in other well-established nationally representative data sets assessing mental health such as the BRFSS.

Descriptive characteristics from the NPSC-19 wave 2 data are reported in Table 1 and were estimated using sample survey weights. The estimates were cut across race and ethnicity, as represented by each respective column. In Table 1, employment status is described across race and ethnicity among labor force participants. We characterize three employment status conditions: 1.) employed, but non-essential worker; 2.) employed, essential non-healthcare worker; and 3.) employed essential healthcare workers. Employed non-essential workers are defined as respondents employed at the time of the survey working from home or not at work, including all medical and healthcare workers who were not deemed essential. Employed essential non-healthcare workers were identified in the data as all respondents who were employed, working outside of the home, and were not employed as healthcare workers at the time of the survey. A similar strategy was

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applied to identify essential healthcare workers. The characterization of health care workers was established using stay-at-home orders issued by the state and the state-level determination of essential workers. During wave 2 of the survey, most states issued some degree of a stay-at-home order, except for five states: Arkansas, Iowa, Nebraska, North Dakota, and South Dakota. In wave 2 of the NPSC-19, we observe approximately 54 respondents residing in states with no stay-at-home orders issued. Analyses conducted with and without these observations suggest our results are robust to the possibility of erroneous categorization for these 54 respondents along employment status.

Finally, mental health is assessed in the NPSC-19 using well-established measures for mental health distress symptoms along two dimensions; anxiety and depression. Specifically, we leverage reliable and widely used items from the General Anxiety Disorder questionnaire (GAD-7) to measure the severity of anxiety (Spitzer et al., 2006) and the Patient Health Questionnaire (PHQ-9) used to measure the severity of depression (Kroenke et al., 2001). While the NPSC-19 does not include all of the items outlined in the GAD-7 or PHQ-9, the mental health survey items available have been shown in the psychometric literature to be strongly correlated with its respective measure of severity, the GAD-7 and PHQ-9 (Johnson et al., 2019; Löwe et al., 2008; Tomitaka et al., 2018). The items included in the NPSC-19 used to capture mental health distress symptoms asks respondents: *In the past 2 weeks, how often have you been bothered by the following problems?* The GAD-7 specific items are: 1.) *Feeling nervous, anxious, or on edge*; and 2.) *Not being able to stop or control worrying*. The PHQ-9 specific items are: 1.) *Feeling down, depressed, or hopeless*; 2.) *Little interest or pleasure in doing things*; and 3.) *Trouble sleeping at night*. Each of the mental health items was surveyed using a four-point scale, as follows: 1.) *Not at all*; 2.) *Several days*; 3.) *More than half the days*; 4.) *Nearly every day*. Table 2, provide each of the mental health survey items and respective measures.

Table 3 contains the proportion of respondents who reported a given level of distress for each of the mental health survey items. Panel A, of Table 3, contains the two items related to GAD-7, and Panel B contains the three items related to the PHQ-9. Each statistic was estimated within a specific racial or ethnic group compared to the response rate estimated for White respondents. The differences in the proportions, for instance, between Black and White respondents, were evaluated using a two-sample test of proportions. The estimates presented in Table 3, suggests that the difference in the proportion of mental health distress estimated for Black and Hispanic respondents, and without conditioning on any covariates, were not statistically different from that estimated among White respondents.

## 2.2 BRFSS comparison

This subsection examines changes in anxiety and depression before and during the Coronavirus pandemic by comparing the NPSC-19 to the 2018 Behavioral Risk Factor Surveillance System (BRFSS) data. The context, phrasing, and scale of the mental health items recorded in the BRFSS are akin to those recorded in the NPSC-19, except for sleep quality. The BRFSS does not contain sleep quality, a valid measure in the PHQ-9, and so we do not include it in this comparison.

Our approach constructs a severity score for anxiety and depression separately. Each mental health item is assigned a numeric score between 0-3, ranking a response of “*Not at all*” the lowest and “*Nearly every day*” the highest. The anxiety and depression items summed, respectively, to construct the quasi GAD-7 and PHQ-9 scores. While the GAD-7 and PHQ-9 are not completely represented, we follow the same technique outlined in the literature (Spitzer et al., 2006; Kroenke et al., 2001). Given this incomplete coverage, we are unable to make any discrete interpretations concerning diagnosis (Spitzer et al., 2006; Kroenke et al., 2001).

Figure 1 illustrates the average scores for mental health distress across race and ethnicity for the NSPC-19 and the BRFSS. As expected, there is a distinct increase in all Americans’ mental health distress during the Coronavirus pandemic. However, the proportional change across race and ethnicity is nuanced. It suggests that on average Black Americans, during the pandemic, expressed a higher degree of resiliency to depression relative to their White and Hispanic counterparts. On the other hand, on average, Hispanic Americans are shown to be disproportionately impacted by the pandemic across measures for anxiety and depression.

## 2.3 Analysis

We conduct our analysis in two stages. First, we evaluate the probability of experiencing mental health distress symptoms across race, ethnicity, and employment status using the logistic regression model. A dichotomous variable for each of the mental health survey items was constructed to indicate if the respondent reported any level of distress related to the specific symptom. For instance, when constructing the variable  $h_i$  for “worry,”  $h_i$  equals one if the respondent experienced “worry” at least “several days” in the past two weeks and zero if the respondent did not experience any issues with “worry” in the past two weeks. The model is described as follows:

$$Pr(h_i = 1) = \Lambda(\gamma_s + \eta E_i + \rho R_i + \alpha(E_i \times R_i) + D'\omega + X'\beta) \quad (1)$$

In Model 1,  $h_i$  represents a dichotomous dependent variable for each mental health survey item. We control for gender, age, education, race, employment status, self-reported quality of health, income, relationship status, state fixed effects, state-level pandemic response policy indicators and duration of those policies. Specifically,  $X$  represents a vector of individual level characteristics;  $\gamma_s$  represents the state fixed effects;  $D$  represents a vector of state-level pandemic response policies, the duration of those policies, as well as the number of COVID-19 cases and deaths. The variables of interest are race, employment status, and the interaction between the two; where “White” and “Unemployed” are considered the base categories. The variable  $E_i$  is a categorical indicator for employment status,  $R_i$  is an indicator for race and ethnicity of the respondent.  $E_i \times R_i$  captures the interaction between race/ethnicity and employment status. Given that the model is non-linear, the results that we report are the estimated marginal effects calculated between employment status but over race and ethnicity.<sup>2</sup>

Our analysis’s second stage considers the severity of mental health distress from the quasi GAD-7 and PHQ-9 scores using an OLS model. Given that our measures of severity are limited, we transform the measure using the z-score. The transformation was performed by subtracting the individual’s quasi GAD-7 or PHQ-9 score from the sample average and divided by the standard deviation,  $Z_i = \frac{S_i - \mu}{\sigma}$ . This approach allows us to interpret inter-group differences of symptom severity in terms of standard deviations. The OLS model is shown as:

$$Z_i = \gamma_s + D\omega + \eta E_i + \rho R_i + \beta(E_i \times R_i) + X\alpha + \varepsilon_i \quad (2)$$

In Model 2 the dependent variable,  $Z_i$ , represents the transformed quasi GAD-7 or PHQ-9 scores. Model 2 is explained using the same set of covariates included in Model 1. The coefficient on the interaction  $E_i \times R_i$  term is used to capture the differences in symptom severity related to depression and anxiety, race/ethnicity, and employment status. Given that the model is linear, we interpret the marginal effects directly from the regression coefficient.

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<sup>2</sup>For instance the marginal effect of a particular employment status is calculated as:  $\frac{\partial Pr(h_i=1)}{\partial E_i} = \Lambda(\gamma_s + \eta E_i + \rho R_i + \alpha(E_i \times R_i) + D'\omega + X'\beta) [1 - \Lambda(\gamma_s + \eta E_i + \rho R_i + \alpha(E_i \times R_i) + D'\omega + X'\beta)](\eta + \alpha R_i)$



## 3 RESULTS

### 3.1 Main Findings

Table 4 contains the results for each of the GAD-7 and PHQ-9 items included in our survey. The results suggest that Black respondents were less likely to report issues with *Anxiety*, *Depression*, and *Pleasure*, as reported in each respective column. These findings may be a statistical artifact; however, previous studies have provided evidence suggesting that Black individuals are relatively resilient despite facing significant experiences with adversity (Fergus and Zimmerman, 2005). Nonetheless, these effects are small, imprecise, and are not consistent across all mental health items. Results specific to employment status suggest essential health care workers experienced greater mental distress relative to unemployed workers—a finding consistent across all mental health items and previous research (Lai et al., 2020).

Table 4 suggests that Black non-essential and essential workers, health and non-health related, experienced higher levels of mental health distress relative to their white counterparts. Specifically, non-essential Black workers are more likely to report symptoms of *Anxiety* and *Worry* by approximately 30-percentage points. We find that Black essential health care workers experience higher mental distress levels, except for the *Depression* item. A consistent finding in Table 4 suggests that both Black and Hispanic essential non-healthcare workers experience elevated levels of mental health distress relative to their White counterparts. This finding is particularly true for essential Hispanic workers who are 62-percentage points more likely to report being *Depressed*. We do not find disparities for other types of Hispanic workers.

We report the estimates from the quasi PHQ-9 and GAD-7 analysis in Table 5, and find that the results are consistent with those reported in Table 4. Black non-essential workers reported higher levels of anxiety (as measured by the quasi PHQ-9) by 0.7 standard deviations relative to White respondents. We find similar results with the quasi GAD-7 score; specifically, Black non-essential workers report higher depression levels by 0.8 standard deviations relative to White respondents. We also see relatively higher levels of mental health distress for Black essential workers. Hispanic essential workers report the most staggering levels of mental health distress—a disparity that is more than one standard deviation greater than their White counterparts. Given the daily reliance on essential workers, our results are disconcerting. Our findings reveal that a marginalized segment of the population, who are over-represented in essential jobs, is more anxious and depressed during the pandemic. This is in addition to other obstacles that Black and Hispanic individuals face, independent of the Coronavirus pandemic. Given the survey’s timing, it is not easy to disentangle

what is precisely driving our results. However, our findings provide clear evidence that Black and Hispanic essential non-health workers experience disproportionately higher levels of mental health distress.

Our analysis has several limitations that warrant thoughtful consideration. First, we focus on a multidimensional comparison across employment status to capture the disparities across race and ethnicity. However, we are unable to evaluate how the differences in mental health distress between these groups have evolved, given the Coronavirus pandemic. We address this concern by evaluating the 2018 BRFSS data set to get a visual comparison; but, this approach only gives us a rough approximation. Ultimately, our analysis is a cross-sectional evaluation of the disparities that cut across race and ethnicity at the time in which the American people were experiencing the Coronavirus pandemic. We must also acknowledge a potential selection bias in terms of employee type representation; however, we address these potential distortions by weighting the data.

## 4 DISCUSSION

The reality that the pandemic is disproportionately impacting mortality within communities of color is clear. What has been less apparent is the pandemic's health impacts beyond mortality. This paper explores how the pandemic and stressors brought on by it have placed Americans in an elevated state of mental health distress. We offer suggestive evidence that Black and Hispanic workers report elevated levels of mental health distress compared to White survey respondents. Our findings are especially concerning given there has been little effort by policymakers to understand the role in which the social and economic conditions that increase exposure to the virus are constructing racial and ethnic disparities in Coronavirus cases and mortality. For instance, the ability to self-isolate is absolutely a privilege that considerably reduces the risk of exposure to the virus and is a risk reduction strategy that many households in Black and Hispanic communities may not be able to employ.

The findings presented in this paper highlight the additional dimensions to which Black and Hispanic Americans are disproportionately affected by the pandemic. Given the findings, it is essential to ensure that pre-existing barriers in seeking mental health treatment do not further exacerbate the prevailing disparities in diagnoses and treatment of mental illnesses. The elevated levels of mental health distress also raise concerns regarding the comorbidities associated with mental illness, the most common being substance use disorders. While directionality is less clear, several national surveys have estimated that roughly half of individuals who experience any mental illness in their lifetime will also have a substance use disorder.

As the U.S. charts a path forward, how will it incorporate policies that ensure racial and ethnic equity as a part of the recovery without understanding how the Coronavirus has impacted Black and Hispanic communities beyond viral exposure and mortality? Importantly, how will the country address the trauma the pandemic has imposed on those essential workers' mental health?

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Table 1: NATIONAL PANEL STUDY OF COVID-19

<i>Summary Statistics Across Race &amp; Ethnicity</i>				
	White	Hispanic	Black	Other
Age	49 (0.360)	36 (0.741)	39 (0.794)	39 (0.979)
Woman (%)	0.509 (0.011)	0.527 (0.031)	0.456 (0.026)	0.487 (0.032)
At least one child (%)	0.292 (0.010)	0.471 (0.032)	0.380 (0.027)	0.336 (0.031)
Cohabitant: 65 and older (%)	1.417 (0.017)	1.392 (0.065)	1.386 (0.051)	1.459 (0.064)
Lives with spouse or partner (%)	0.557 (0.011)	0.448 (0.033)	0.338 (0.027)	0.482 (0.035)
Single parent (%)	0.189 (0.017)	0.259 (0.040)	0.383 (0.048)	0.232 (0.055)
Income	61,877 (1,533)	53,757 (4,133)	56,166 (3,782)	59,769 (3,859)
Unemployed (%)	0.126 (0.007)	0.211 (0.027)	0.180 (0.021)	0.223 (0.028)
Employed non-essential (%)	0.217 (0.010)	0.294 (0.029)	0.256 (0.024)	0.246 (0.029)
Employed essential, non-healthcare (%)	0.191 (0.009)	0.207 (0.026)	0.277 (0.025)	0.220 (0.028)
Employed essential, non-healthcare (%)	0.064 (0.006)	0.102 (0.018)	0.073 (0.014)	0.048 (0.015)
No. Observations	1,507	156	231	132

Note: The sample used to calculate the estimates includes the full NPSC-19 sample. Statistics were estimated using the sample survey weights. Standard errors are reported for each statistic in parenthesis.



Table 2: NPSC-19 Mental Health Survey Items & Scoring

<i>Panel A: Survey Instrument to Measure General Anxiety Disorder (GAD-7)</i>	<i>Panel B: Survey Instrument to Measure Depression (PHQ-9)</i>
<p><i>Over the last 2 weeks, how often have you been bothered by <b>feeling nervous, anxious or on edge?</b></i></p> <p>0 = Never</p> <p>1 = For several days</p> <p>2 =For than half the days</p> <p>3 = Nearly every day</p> <p><i>Over the last 2 weeks, how often have you been bothered by <b>not being able to stop or control worrying?</b></i></p> <p>0 = Never</p> <p>1 = For several days</p> <p>2 =For than half the days</p> <p>3 = Nearly every day</p>	<p><i>Over the last 2 weeks, how often have you been bothered by <b>feeling down, depressed or hopeless?</b></i></p> <p>0 = Never</p> <p>1 = For several days</p> <p>2 =For than half the days</p> <p>3 = Nearly every day</p> <p><i>Over the last 2 weeks, how often have you been bothered by <b>having little interest or pleasure in doing things?</b></i></p> <p>0 = Never</p> <p>1 = For several days</p> <p>2 =For than half the days</p> <p>3 = Nearly every day</p> <p><i>Over the last 2 weeks, how often have you been bothered with <b>trouble sleeping at night?</b></i></p> <p>0 = Never</p> <p>1 = For several days</p> <p>2 =For than half the days</p> <p>3 = Nearly every day</p>

Table 3: Mental Health Survey Items: NPSC-19

<i>Panel A: GAD-7 Inventories; Anxiety</i>							
	White	Hispanic	$\Delta(\text{Hisp.-White})$	Black	$\Delta(\text{Black-White})$	Other	$\Delta(\text{Other-White})$
<i>Feeling nervous, anxious, or on edge:</i>							
Not at all	0.329 (0.033)	0.148 (0.032)	-0.181 (0.093)	0.398 (0.054)	0.069 (0.087)	0.289 (0.049)	-0.040 (0.103)
Several	0.322 (0.035)	0.399 (0.081)	0.077 (0.103)	0.288 (0.047)	-0.034 (0.092)	0.351 (0.049)	0.029 (0.109)
More than half	0.204 (0.035)	0.254 (0.072)	0.050 (0.102)	0.129 (0.027)	-0.075 (0.091)	0.165 (0.032)	-0.039 (0.109)
Nearly every day	0.145 (0.021)	0.198 (0.048)	0.054 (0.061)	0.185 (0.048)	0.040 (0.056)	0.196 (0.038)	0.051 (0.065)
<i>Not being able to stop or control worrying:</i>							
Not at all	0.412 (0.036)	0.260 (0.059)	-0.151 (0.102)	0.422 (0.054)	0.010 (0.094)	0.351 (0.044)	-0.061 (0.110)
Several	0.285 (0.036)	0.261 (0.075)	-0.024 (0.104)	0.275 (0.048)	-0.010 (0.094)	0.286 (0.047)	0.001 (0.111)
More than half	0.174 (0.032)	0.326 (0.079)	0.152 (0.092)	0.124 (0.025)	-0.050 (0.081)	0.237 (0.051)	0.063 (0.098)
Nearly every day	0.130 (0.019)	0.153 (0.039)	0.023 (0.055)	0.180 (0.049)	0.050 (0.052)	0.125 (0.029)	-0.004 (0.059)
<i>Panel B: PHQ-9 Inventories; Depression</i>							
	White	Hispanic	$\Delta(\text{Hisp.-White})$	Black	$\Delta(\text{Black-White})$	Other	$\Delta(\text{Other-White})$
<i>Little interest or pleasure in doing things:</i>							
Not at all	0.404 (0.034)	0.348 (0.080)	-0.056 (0.100)	0.399 (0.050)	-0.006 (0.089)	0.287 (0.038)	-0.117 (0.106)
Several	0.314 (0.037)	0.263 (0.062)	-0.051 (0.104)	0.293 (0.054)	-0.021 (0.095)	0.369 (0.049)	0.055 (0.113)
More than half	0.173 (0.036)	0.214 (0.068)	0.041 (0.104)	0.153 (0.035)	-0.020 (0.093)	0.162 (0.034)	-0.012 (0.112)
Nearly every day	0.108 (0.016)	0.174 (0.044)	0.066 (0.048)	0.155 (0.048)	0.047 (0.045)	0.182 (0.051)	0.073 (0.052)
<i>Feeling down, depressed, or hopeless:</i>							
Not at all	0.389 (0.035)	0.370 (0.079)	-0.019 (0.100)	0.389 (0.049)	-0.000 (0.090)	0.361 (0.050)	-0.029 (0.107)
Several	0.363 (0.041)	0.230 (0.050)	-0.133 (0.114)	0.251 (0.049)	-0.112 (0.105)	0.342 (0.049)	-0.021 (0.125)
More than half	0.121 (0.017)	0.236 (0.076)	0.115 (0.054)	0.161 (0.041)	0.040 (0.045)	0.145 (0.031)	0.024 (0.052)
Nearly every day	0.127 (0.019)	0.164 (0.043)	0.037 (0.054)	0.199 (0.052)	0.072 (0.051)	0.152 (0.035)	0.025 (0.058)
<i>Trouble sleeping at night:</i>							
Not at all	0.353 (0.033)	0.271 (0.061)	-0.082 (0.093)	0.347 (0.048)	-0.006 (0.085)	0.280 (0.038)	-0.073 (0.100)
Several	0.349 (0.037)	0.293 (0.082)	-0.056 (0.107)	0.347 (0.056)	-0.001 (0.097)	0.320 (0.049)	-0.029 (0.115)
More than half	0.141 (0.030)	0.210 (0.067)	0.070 (0.086)	0.172 (0.043)	0.031 (0.078)	0.141 (0.029)	0.000 (0.092)
Nearly every day	0.158 (0.027)	0.226 (0.051)	0.068 (0.078)	0.134 (0.033)	-0.023 (0.070)	0.259 (0.052)	0.102 (0.085)
No. Observations	1,507	156		231		132	

Note: Statistics were estimated using survey weights. Standard errors are reported for each statistic in parenthesis.

Table 4: PROBABILITY OF MENTAL HEALTH DISTRESS

	<i>GAD-7 Inventories</i>		<i>PHQ-9 Inventories</i>		
	Anxiety	Worry	Depression	Pleasure	Sleep
<i>Race &amp; Ethnicity: relative to non-Hispanic Whites</i>					
Black	-0.10*	-0.03	-0.09*	-0.09*	-0.01
	(0.06)	(0.04)	(0.05)	(0.05)	(0.04)
Hispanic	0.02	-0.12*	0.08*	0.04	-0.05
	(0.04)	(0.03)	(0.05)	(0.06)	(0.06)
<i>Employment status: relative to "Unemployed"</i>					
Non-essential	-0.09*	-0.05	-0.02	0.05	0.09*
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Essential non-health	-0.14***	-0.09*	-0.05	-0.01	-0.01
	(0.05)	(0.05)	(0.05)	(0.06)	(0.05)
Essential health	0.10*	0.15**	0.13**	0.15**	0.16***
	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)
<i>Employment status × Race &amp; Ethnicity</i>					
Black: non-essential	0.28**	0.31**	0.05	0.06	0.28***
	(0.12)	(0.12)	(0.12)	(0.11)	(0.10)
Black: essential non-health	0.31***	0.52***	0.27**	0.28**	0.30***
	(0.12)	(0.13)	(0.11)	(0.11)	(0.10)
Black: essential health	0.43***	0.41***	0.18	0.34**	0.30***
	(0.14)	(0.15)	(0.14)	(0.14)	(0.14)
Hispanic: non-essential	0.01	0.05	0.28*	0.26	0.21
	(0.11)	(0.11)	(0.15)	(0.16)	(0.18)
Hispanic: essential non-health	0.41***	0.33***	0.62***	0.55***	0.50***
	(0.10)	(0.10)	(0.15)	(0.17)	(0.19)
Hispanic: essential health	0.11	0.02	0.29*	0.39**	0.31*
	(0.12)	(0.13)	(0.16)	(0.18)	(0.19)
Dependent variable mean	0.66	0.60	0.63	0.61	0.65
Covariates	✓	✓	✓	✓	✓
No. Observations	2,026	2,026	2,026	2,026	2,026

Note: The dependent variables include the dichotomous indicator variable for each mental health survey item. Statistics were estimated using the sample survey weights. Standard errors are reported for each statistic in parenthesis. Statistical significance is indicated at the 10%, 5%, and the 1% levels, respectively, as \*, \*\*, and \*\*\*.

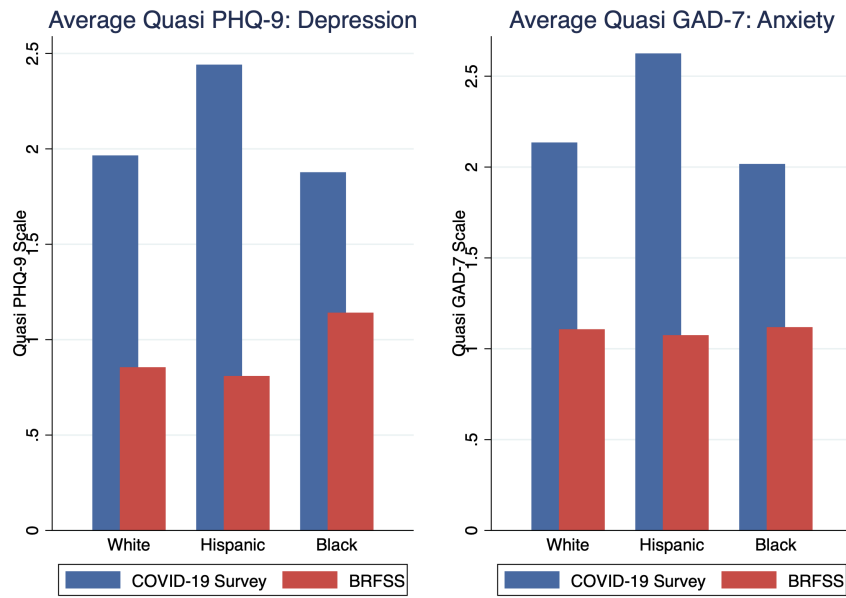
Table 5: MENTAL HEALTH DISTRESS

(standard normal dependent variables)

	Quasi PHQ-9	Quasi GAD-7
<i>Race &amp; Ethnicity: relative to non-Hispanic Whites</i>		
Black	-0.16 (0.14)	-0.09 (0.14)
Hispanic	0.03 (0.14)	0.04 (0.12)
<i>Employment status: relative to "Unemployed"</i>		
Non-essential	0.03 (0.12)	-0.11 (0.11)
Essential non-health	-0.06 (0.12)	-0.17 (0.10)
Essential health	0.42** (0.17)	0.38** (0.16)
<i>Employment status <math>\times</math> Race &amp; Ethnicity</i>		
Black: non-essential	0.68** (0.29)	0.78** (0.33)
Black: essential non-health	0.79*** (0.27)	0.74** (0.31)
Black: essential health	0.83** (0.41)	0.63 (0.40)
Hispanic: non-essential	0.44 (0.45)	0.22 (0.29)
Hispanic: essential non-health	1.13*** (0.42)	0.88*** (0.28)
Hispanic: essential health	0.41 (0.53)	0.17 (0.43)
Dependent variable mean	2.20	3.18
Dependent variable Std.	[1.98]	[2.79]
Covariates	✓	✓
No. Observations	2,026	2,026

Note: The dependent variables include the transformed (z-score) quasi PHQ-9 and GAD-7 scores. Statistics were estimated using the sample survey weights. Standard errors are reported for each statistic in parenthesis. Statistical significance is indicated at the 10%, 5%, and the 1% levels, respectively, as \*, \*\*, and \*\*\*.

Figure 1: Mental Health Disparity, Cross Survey Comparison



Notes: