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

COVID-19 and Health Outcomes Fall 2020
NBER

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December 4, 2020

Overview

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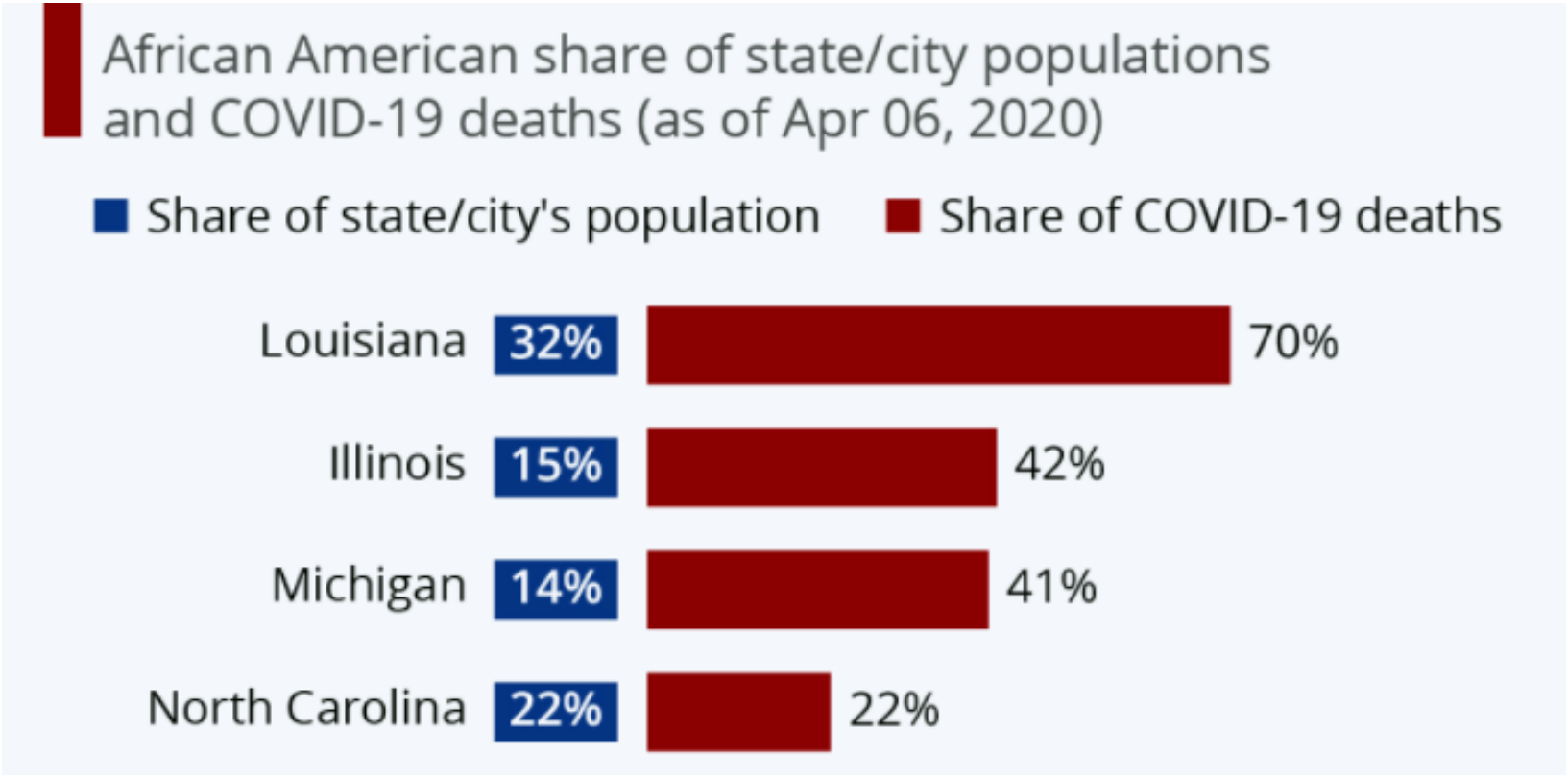
COVID-19

As of today there has been:

- 276,000 deaths
- 14.2 million confirmed cases
- Jan. 21st, first reported case in the US
- Feb. 29, first reported death in the US
- March 13, national emergency declared
- By end of March, 30 states had stay-at-home orders

COVID-19 and the Black Community



Source: CDC & statista

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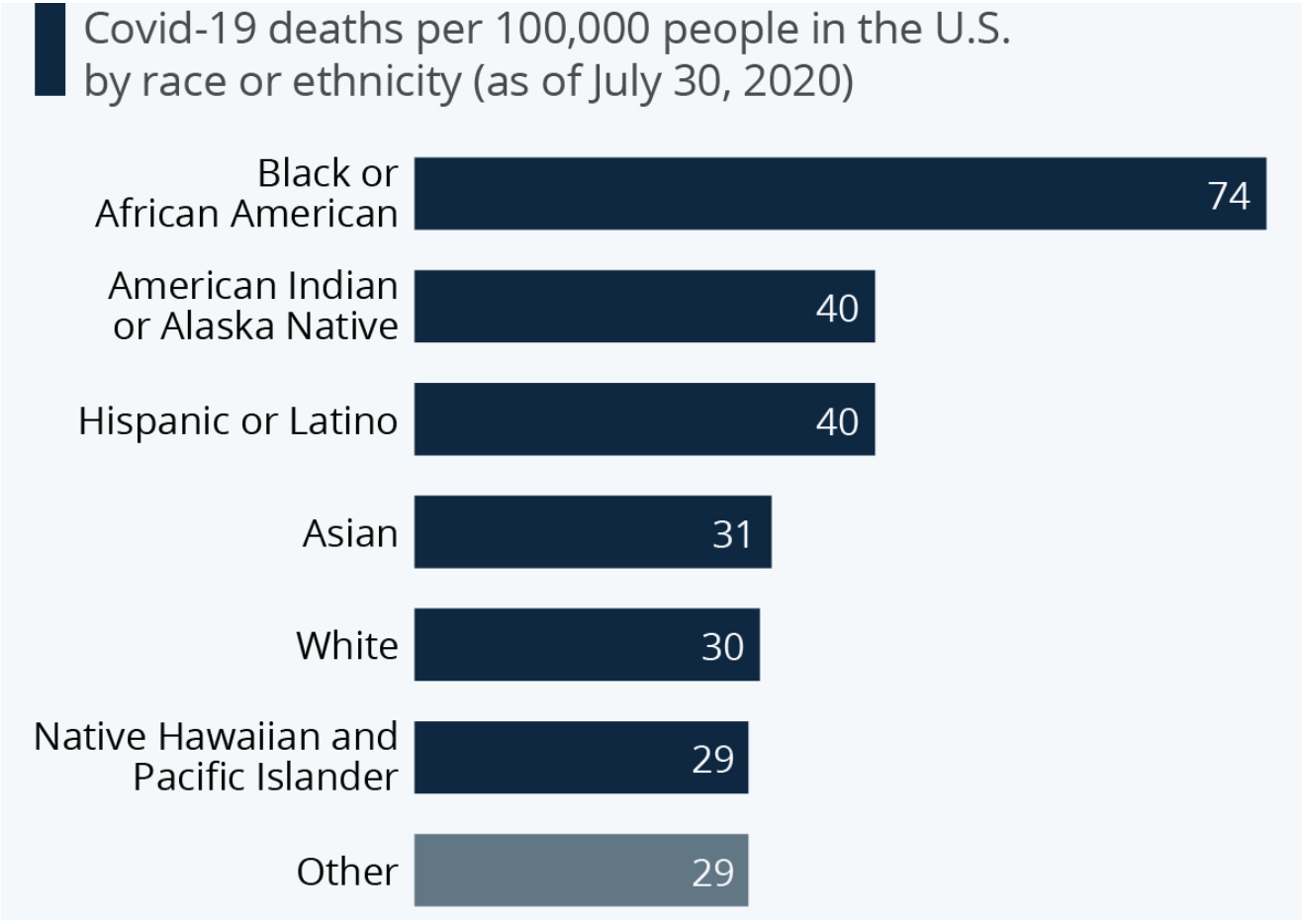
As of April 15th

Of the states that collected information on race & ethnicity, below are the number of states which reported an over-representation of COVID-19 deaths by race/ethnicity:

- **Asian**: 1 for 19 states
- **Black**: 18 of 23 states
- **Hispanic**: 0 of 20 states
- **Indigenous**: 1 of 12 states
- **White**: 0 for 23 states

COVID-19 and the Racial/Ethnic Disparity



Source: The COVID Tracking Project & statista

Motivation

As the US charts a path forward, how will it incorporate **policies that ensure racial & ethnic equality** as a part of the recovery without understanding how the COVID-19 has impacted Black & Hispanic communities beyond viral exposure & mortality?

What are we interested in?

Given the racial & ethnic disparities in COVID-19 cases, mortality, & exposure we use a nationally representative survey to assess...

How reported mental health distress differ by race/ethnicity & across current employment status?

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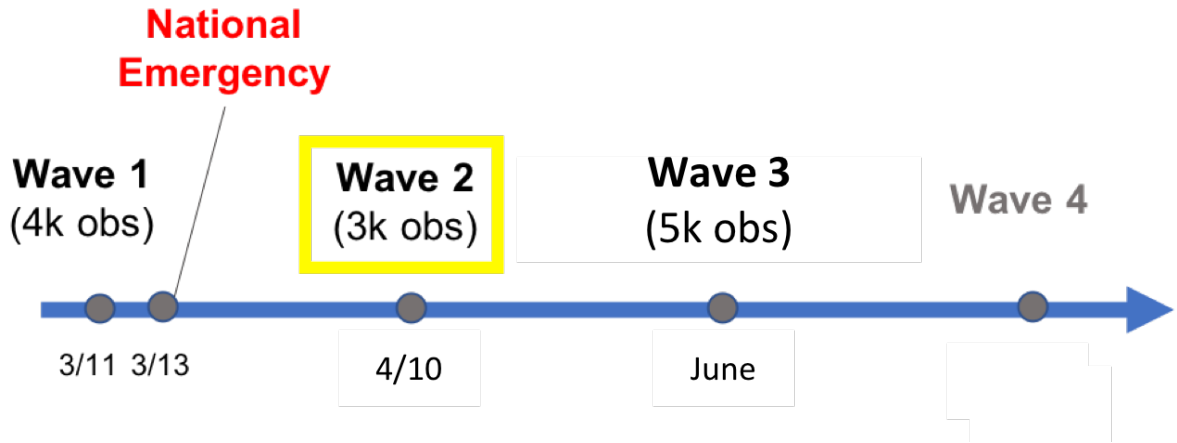
Data - Survey Team

The National Panel Study of COVID-19 (NPSC19)

The data we utilize has been collected as part of a larger survey fielded by UCLA in collaboration with UNM, ASU & UNC. Administered by:

- Matt Barreto
- Tyler Reny
- Gabriel Sanchez



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Data - Wave 2

Wave 2: 3,338 observations

- roughly 2,000 from Wave 1
- roughly 1,000 a fresh cross section
- national household survey
- zip-codes

Racial/Ethnic Breakdown:

- 70% White
- 9.6% Hispanic
- 12.2% Black

$\Longrightarrow$Economic & health questions were added in Wave 2.

Survey Questions

- Employment
  1. Not in labor force (1,210 obs)
  2. Unemployed (458 obs)
  3. Employed non-essential worker (working from home) (684 obs)
  4. Employed essential non-healthcare worker (615 obs)
  5. Employed essential healthcare worker (200 obs)
- Financial: UI benefits, stimulus, income, financial stability
- Mental Health: depression (quasi PHQ-9), anxiety (quasi GAD-7)
- Physical Health: exercising, eating habits, substance use
- Distance Learning
- Other: age, size & composition of households

Mental Health Survey Questions

In the past 2 weeks, how often have you been bothered by the following problems?

Outcome Variable: Mental Health Distress

- Anxiety (GAD-7 Inventories)
  1. *Feeling nervous, anxious, or on edge*
  2. *Not being able to stop or control worrying*
- Depression (PHQ-9 Inventories)
  1. *Little interest or pleasure in doing things*
  2. *Feeling down, depressed, or hopeless*
  3. *Trouble sleeping at night*

Survey Question Responses

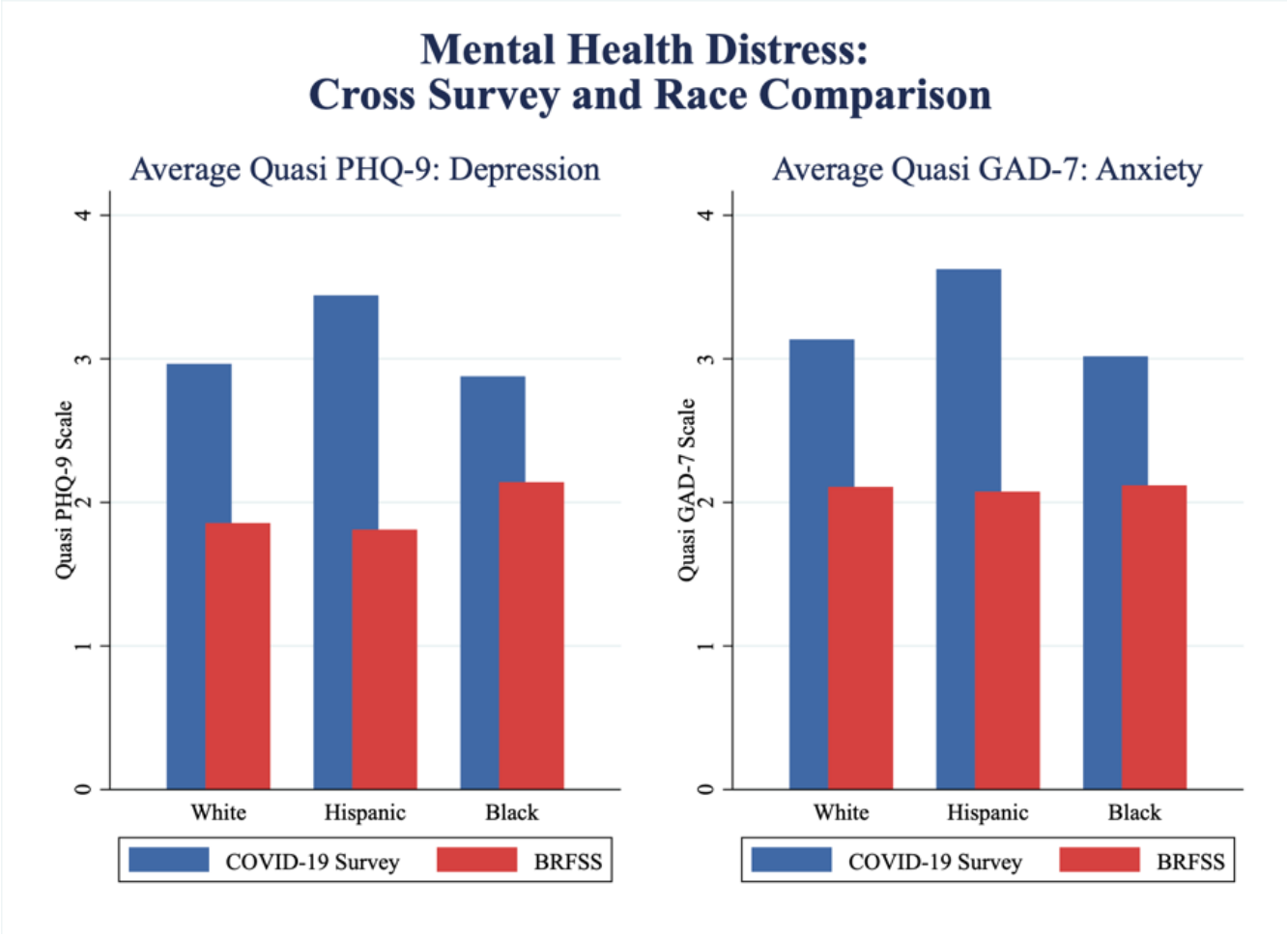
Each of the mental health items were surveyed using a four-point scale, as follows:

1. Not at all
2. Several days
3. More than half the days
4. Nearly every day

Limitations

- Analysis is **descriptive**, not causal.
- Selection bias in terms of employee type represented
  $\Longrightarrow$ weight the data
- No baseline
  $\Longrightarrow$ take a look at BFRSS
- Worker typology is self-reported and no way to cross reference

Mental Distress Levels: Pre-COVID & COVID



Higher levels of mental health distress during COVID compared to BRFSS 2018.

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Revisiting the Research Question

How does reported mental health distress differ by race/ethnicity & across current employment status?

Preview of Results

We observe a statistically significant difference in the mental health distress of Black & Hispanic respondents in some of the worker typologies relative to their White counterparts.

Results suggest **elevated mental health distress**:

- for all Black workers, particularly essential non-healthcare
- for Hispanic essential non-healthcare workers

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Methods

To assess mental health distress across race/ethnicity & worker typology, we employ two models.

Models

1. The probability of experiencing mental health distress across each individual inventory
2. The severity of mental health distress from the quasi GAD-7 & PHQ-9 scores.

Base Group: White & unemployed

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Model 1

The logistic regression model is,

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

where, h_i is a dichotomous variable,

- 1 if any worry in the past two weeks
- 0 if no worry was reported

Ei is a categorical indicator for employment & *Ri* a race binary

Other Variables: γ_s controls for state fixed effects, D is a vector of state-level pandemic response policies, X is a vector of individual level characteristics.

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Note: estimates are marginal effects

Model 2

We transform our measures of severity using the z-score. This approach allows us to interpret inter-group differences of symptom severity in terms of standard deviations.

The OLS model is,

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

where, Z_i, represents the transformed quasi GAD-7 or PHQ-9 scores

Note: the model is linear, we interpret the marginal effects directly

Probability of Mental Health Distress - Model 1

	GAD-7 Inventories		*PHQ-9 Inventories*		
	Anxiety	Worry	Depression	Pleasure	Sleep
Employment status × Race & Ethnicity					
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)
No. Observations	2,026	2,045	2,046	2,049	2,053

Elevated Mental Distress - Model 1

Essential non-health care (green)

- **B:** increased & significant for all inventories (27 to 52 % points)
- **H:** increased & significant for all inventories (33 to 62 % points)

Essential health care (orange)

- **B:** increased & significant for 4 of 5 inventories (30 to 43 % points)
- **H:** not significant

Non-essential

- **B:** increased & significant for 3 of 5 inventories (28 to 31 % points)
- **H:** not significant

Mental Health Distress - Model 2

	Depression (PHQ)	Anxiety (GAD)
Employment status × Race & Ethnicity		
Black: non-essential	0.68**	0.78**
	(0.29)	(0.33)
Black: essential non-health	0.79***	0.74**
	(0.27)	(0.31)
Black: essential health	0.83**	0.63
	(0.41)	(0.40)
Hispanic: non-essential	0.44	0.22
	(0.45)	(0.29)
Hispanic: essential non-health	1.13***	0.88***
	(0.42)	(0.28)
Hispanic: essential health	0.41	0.17
	(0.53)	(0.43)

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B: 0.7 - 0.8 standard deviation elevated depression & anxiety

H: 0.9 - 1.1 standard deviation elevated depression & anxiety

Robustness

Results are robust to:

- limiting data to working age (under 65)
- across multiple measures of anxiety & depression
- including & excluding 5 states with no stay-at-home order
- control for perception of COVID-19 exposure

Conclusion

- Across all inventories, essential non-health care Black & Hispanic workers have elevated levels of mental health distress
- Strong evidence that Black & Hispanic workers face different mental health stressors than White counterparts

Especially important given,

- Black & Hispanic workers are over-represented in jobs (front-line industries) with relatively lower wages & often no employer-provided health insurance (Darity Jr et al., 2018)

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Moving Forward

Interventions & Policies

- It is essential to ensure that pre-existing barriers in seeking mental health treatment do not further exacerbate the prevailing disparities in diagnoses & treatment of mental illnesses.
- Interventions to help combat a looming mental health crises, might focus on meeting people where they are to help provide adequate mental health care.

Thank You!

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Other COVID related work

Working Papers

- *Distance Learning & Parental Mental Health During COVID-19* (conditional acceptance at Educational Researcher)
- *How Schools Can Build Trust & Meet Expectations: Evidence from the Coronavirus Pandemic*

Other Work

- *The COVID-19 public health & economic crises leave vulnerable populations exposed* - Brookings Blog Post
- *Racial Disparities in Mental Health during COVID19* - ASHEcon Newsletter