The Well-Being of Essential Workers & Parents in the COVID-19 Pandemic

Institute for Research on Poverty Webinar
University of Wisconsin-Madison

Jevay Grooms
Howard University

February 10, 2021
COVID-19

As of today in the US there has been:

- 468k COVID-19 related deaths (roughly the size of Kansas City, MO)
- 27.2 million confirmed COVID-19 cases
- March 13, national emergency declared
- By end of March, 30 states had stay-at-home orders

⇒ The pandemic has altered the very fabric of everyday American life. Our research aims to better understand just how it has impacted the lives of American households at various levels.
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Today I will focus on our paper, 

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

**Co-authors**

Alberto Ortega  
Indiana University, SPEA

Joaquin Rubalcaba  
UNC Chapel Hill, Public Policy

Edward Vargas  
Arizona State, Transborder Studies
Other COVID related work

**Papers**

- *Distance Learning & Parental Mental Health During COVID-19*
  Educational Researcher (2021) with Cassandra Davis, Jevay Grooms, Joaquin Alfredo-Angel Rubalcaba, & Edward Vargas

- *How Schools Can Build Trust & Meet Expectations: Evidence from the Coronavirus Pandemic*, working paper (2021) with Cassandra Davis, Jevay Grooms, & Joaquin Alfredo-Angel Rubalcaba

**Other Work**


- *Racial Disparities in Mental Health during COVID19* - ASHEcon Newsletter (2020)
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?
COVID-19 and the Black Community

African American share of state/city populations and COVID-19 deaths (as of Apr 06, 2020)

- **Louisiana**: 32% of state/city's population, 70% of COVID-19 deaths
- **Illinois**: 15% of state/city's population, 42% of COVID-19 deaths
- **Michigan**: 14% of state/city's population, 41% of COVID-19 deaths
- **North Carolina**: 22% of state/city's population, 22% of COVID-19 deaths

Source: CDC & statista
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 of 19 states
- **Black**: 18 of 23 states
- **Hispanic**: 0 of 20 states
- **Indigenous**: 1 of 12 states
- **White**: 0 of 23 states
COVID-19 and the Racial/Ethnic Disparity

Covid-19 deaths per 100,000 people in the U.S. by race or ethnicity (as of July 30, 2020)

- Black or African American: 74
- American Indian or Alaska Native: 40
- Hispanic or Latino: 40
- Asian: 31
- White: 30
- Native Hawaiian and Pacific Islander: 29
- Other: 29

Source: The COVID Tracking Project & statista
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?
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?
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
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

⇒ 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
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
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
  ⇒ weight the data

- No baseline
  ⇒ look at The Behavioral Risk Factor Surveillance System (CDC)

- Worker typology is self-reported and no way to cross reference
Mental Distress Levels: Pre-COVID & COVID

Mental Health Distress: Cross Survey and Race Comparison

Average Quasi PHQ-9: Depression

Average Quasi GAD-7: Anxiety

Higher levels of mental health distress during COVID compared to BRFSS 2018.
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
The logistic regression model is,

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

where, \( h_i \) is a dichotomous variable,

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

\( E_i \) is a categorical indicator for employment & \( R_i \) a race binary

**Other Variables:** \( \gamma_s \) controls for state fixed effects, \( D \) is a vector of state-level pandemic response policies, \( X \) is a vector of individual level characteristics.

Note: estimates are marginal effects
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,

\[ Z_i = \gamma_s + D\omega + \eta E_i + \rho R_i + \beta (E_i \times R_i) + X\alpha + \varepsilon_i \]  

(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

<table>
<thead>
<tr>
<th>Employment status × Race &amp; Ethnicity</th>
<th>GAD-7 Inventories</th>
<th>PHQ-9 Inventories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anxiety</td>
<td>Worry</td>
</tr>
<tr>
<td>Black: non-essential</td>
<td>0.28**</td>
<td>0.31**</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.12)</td>
</tr>
<tr>
<td>Black: essential non-health</td>
<td>0.31***</td>
<td>0.52***</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>Black: essential health</td>
<td>0.43***</td>
<td>0.41***</td>
</tr>
<tr>
<td></td>
<td>(0.14)</td>
<td>(0.15)</td>
</tr>
<tr>
<td>Hispanic: non-essential</td>
<td>0.01</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>(0.11)</td>
<td>(0.11)</td>
</tr>
<tr>
<td>Hispanic: essential non-health</td>
<td>0.41***</td>
<td>0.33***</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.10)</td>
</tr>
<tr>
<td>Hispanic: essential health</td>
<td>0.11</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.13)</td>
</tr>
<tr>
<td>No. Observations</td>
<td>2,026</td>
<td>2,045</td>
</tr>
</tbody>
</table>
### Elevated Mental Distress - Model 1

<table>
<thead>
<tr>
<th>Category</th>
<th>B: Increased &amp; Significant</th>
<th>H: Increased &amp; Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential non-health care (green)</td>
<td>increased &amp; significant for all inventories (27 to 52 % points)</td>
<td>increased &amp; significant for all inventories (33 to 62 % points)</td>
</tr>
<tr>
<td>Essential health care (orange)</td>
<td>increased &amp; significant for 4 of 5 inventories (30 to 43 % points)</td>
<td>not significant</td>
</tr>
<tr>
<td>Non-essential</td>
<td>increased &amp; significant for 3 of 5 inventories (28 to 31 % points)</td>
<td>not significant</td>
</tr>
</tbody>
</table>
### Mental Health Distress - Model 2

<table>
<thead>
<tr>
<th>Employment status × Race &amp; Ethnicity</th>
<th>Depression (PHQ)</th>
<th>Anxiety (GAD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black: non-essential</td>
<td>0.68**</td>
<td>0.78**</td>
</tr>
<tr>
<td></td>
<td>(0.29)</td>
<td>(0.33)</td>
</tr>
<tr>
<td>Black: essential non-health</td>
<td>0.79***</td>
<td>0.74**</td>
</tr>
<tr>
<td></td>
<td>(0.27)</td>
<td>(0.31)</td>
</tr>
<tr>
<td>Black: essential health</td>
<td>0.83**</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>(0.41)</td>
<td>(0.40)</td>
</tr>
<tr>
<td>Hispanic: non-essential</td>
<td>0.44</td>
<td>0.22</td>
</tr>
<tr>
<td></td>
<td>(0.45)</td>
<td>(0.29)</td>
</tr>
<tr>
<td>Hispanic: essential non-health</td>
<td>1.13***</td>
<td>0.88***</td>
</tr>
<tr>
<td></td>
<td>(0.42)</td>
<td>(0.28)</td>
</tr>
<tr>
<td>Hispanic: essential health</td>
<td>0.41</td>
<td>0.17</td>
</tr>
<tr>
<td></td>
<td>(0.53)</td>
<td>(0.43)</td>
</tr>
</tbody>
</table>

**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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Other COVID related work on Mental Health Distress

Distance Learning & Parental Mental Health During COVID-19

*Educational Researcher* (2021)

- Distance-learning format → forced parents into new teaching roles as *proxy educators*
- We find that parents with children who struggled with distance learning experienced elevated mental distress.
- Given the relationship between teacher burnout and student outcomes, we argue the importance of supporting parents during this time to improve students schooling.
Given our findings in both projects,

- 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.

- also, interventions to help combat a looming mental health crises, might focus on meeting people where they are to help provide adequate mental health care.
COVID & Education Research

An immense shout-out to Cassandra Davis at UNC Chapel Hill who has made all of our educational projects possible with her knowledge and expertise on disasters and educational outcomes.
Thank You!

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