EXPLORING THE EFFECT OF ETHNIC DIVERSITY ON COVID-19-RELATED **MORTALITY IN THE UNITED STATES**

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BACKGROUND

 Since the initial detection of SARS-CoV-2 in December. 2020, the virus has spread across the globe

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- In March 2020, the World Health Organization officially declared the disease caused by SARS-CoV-2, COVID-19, to be a pandemic²
- As the COVID-19 pandemic has progressed, investigators have sought to elucidate the effects of patient-specific factors, such as co-morbidities and ethnic background, on the survivability of the virus²
- Three of the commonly mentioned conditions linked to adverse outcomes in the setting of COVID-19 are hypertension, diabetes, and obesitv²
- · While these conditions are relatively common, in relation to the ethnic groups of the United States, African Americans have a historically higher incidence of the above disease states³⁻⁵
- Due to this established history of disease variance, whether hereditarily or systemically-mediated, it has been shown that the African American population in the United States may bear a disproportionate burden of COVID-19related mortality³

PURPOSE

Evaluate the correlation between African American ethnicity and incidence of COVID-19-related mortality

METHODS

- COVID-19 fatalities, as reported by local public health departments, were recorded for Georgia (n=2,605)6, Missouri (n=908)⁷, and Oregon (n=187)⁸ from December 21, 2019 to June 18, 2020
- · These states were selected due to similarities in the social distancing measures implemented but differences in their African American population (32.4% Georgia, 11.8% Missouri, 2.2% Oregon)
- Data collection was stopped at June 18, 2020 due to changes in social distancing policies
- Reported fatalities were validated using the Institute for Health Metrics and Evaluation data set9
- · Cumulative fatalities were normalized using the population of each state¹⁰
- · The resulting normalized cumulative fatalities were compared using Cox Proportional Hazard Regression analysis
- Results were interpreted at the α =0.05 level

RESULTS & DISCUSSION









Table 1: Cox Proportional Regression Analysis Summary

State	Percentage African American	Hazard Ratio (HR)	P-value	Interpretation
Georgia	32.4%	5.53	<0.001	Significant
Missouri	11.8%	3.34	<0.001	Significant
Oregon	2.2%	1.00		

RESULTS & DISCUSSION

- Of the reported fatalities in Georgia. Missouri. and Oregon. 43%, 30%, and 4% were in African Americans, respectively6-8
- · This corresponds to a 1.6 to 3.2-fold increase in the risk of COVID-19-related mortality in African Americans as compared to all other ethnicities6-8
- The incidence of African American fatalities for the total population of each state ranged from 4.4 to 10.6 deaths per 10.0000 people6-8
- · As compared to Oregon, the risk of COVID-19-related mortality was significantly higher in Georgia (HR=5.53; p<0.001) and Missouri (HR=3.34: p<0.001)
- These findings suggest that African American ethnicity is may be related to overall increased risk of COVID-19related fatalities, potentially due to increased incidence of co-morbidities
- Notably, one large study from the United Kingdom demonstrated a similar increased risk in COVID-19-related fatalities in Black patients (HR=1.48: 95% Confidence Interval 1.29-1.69) despite universal healthcare and uniform access to healthcare. In this UK study, the risk remained elevated for Black patients despite adjustment for co-morbidities2
- Our findings support the hypothesis of an increased incidence of COVID-19-related fatalities in the African American population in the United States

CONCLUSION

Results show that African American ethnicity may significantly contribute to an increased incidence of COVID-19-related mortality

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