



Health Disparities with COVID-19: Is there an association between demographics, comorbidities, and clinical outcomes in hospitalized patients with COVID-19 on the FM service?

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Introduction

- COVID-19 has caused a global pandemic that has devastated our nation with unprecedented challenges from a public health and economic standpoint.
- The virus was first identified in December 2019 in the Hubei province of China, and declared a global pandemic by the World Health Organization on March 11, 2020.
- It has claimed over half a million lives in the United States and over 3 million worldwide, making it one of the deadliest pandemics in history.
- Data shows that racial and ethnic minority groups have been disproportionately affected by COVID-19, possibly a direct result of long-standing systemic health and social inequities that exist in the United States.
- These populations have a higher likelihood of developing pre-existing conditions (hypertension, diabetes mellitus, and cardiovascular disease) that may contribute to poorer outcomes when infected by COVID-19.

Purpose

- Understand the association between demographics and comorbidities on clinical outcomes of hospitalized patients with COVID-19
- Understand the impact of the standard of care (antibiotics, hydroxychloroquine, steroids, vitamins) compared to a sub-group who also received colchicine

Methods

- We performed a chart review of 34 patients hospitalized with COVID-19 between March 2020 and June 2020.
- We collected demographic data, including age, sex, ethnicity, co-morbidities, and treatments.
- The clinical endpoints included inflammatory markers, length of stay, and outcome.

Results

- There was no statistical significance between demographics (ethnicity, gender) and clinical outcomes among hospitalized patients with COVID-19.
- There was a greater number of hospitalized patients who were Hispanic (50%) and Black (24%), compared to White (18%).
- There was statistical significance for ferritin as an inflammatory marker for ethnicity (highest among Hispanics), but it did not have a significant impact on clinical endpoints (LOS or outcome)
- Due to methodological limitations in sample size, we could not study clinical outcomes in sub-groups receiving standard of care compared to the colchicine group

Figure 1: Percentage of Hospitalized Patients with COVID-19 by Ethnicity

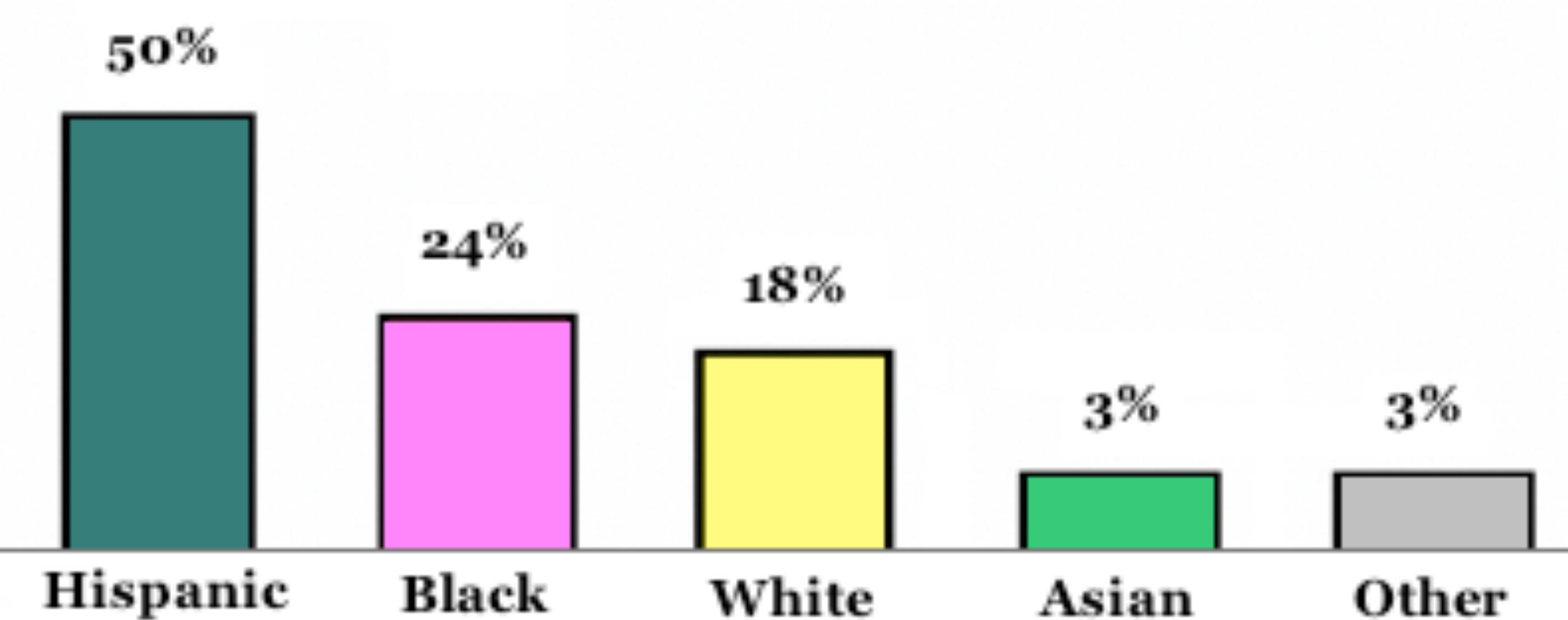


Figure 2: Ethnicity and Clinical Outcomes in Hospitalized Patients with COVID-19

	Other*	Asian*	Black	Hispanic	White	H	p
Age	64	64	44	61	56	1.4032	.628
BMI	27	27	28	30	35	6.4984	.073
Length of Stay (median # of days)	18	9	4.5	21	7	3.8609	.364
Inflammatory - CRP	236	112	71	118	94	2.0336	.358
Inflammatory - Ferritin	2288	6387	604	834	277	4.6509	.044
Outcome - Discharged	100%	100%	62%	82%	67%		
Outcome - Intubated	0%	0%	13%	6%	0%		
Outcome - Decreased	0%	0%	25%	12%	33%		
						10.07	.610

H = Kruskal Wallis Test

*Data omitted due to small sample size (n=1)

Discussion

- We still have many unanswered questions with COVID-19 due to research limitations, but we know racial and ethnic disparities exist in healthcare and are directly associated with a higher incidence of chronic conditions and poor health outcomes.
- Our inpatient service had a disproportionate number of hospitalized patients with COVID-19 who were Black and Hispanic, which is consistent with nationwide statistics.
- The etiology of health disparities is multifactorial and involves economic, political, environmental, social, and cultural factors. These groups often experience lower incomes, more unemployment, food and housing insecurities, educational gaps, and lack of access to healthcare services or health insurance.
- As healthcare professionals, we must acknowledge the importance of social determinants of health that persistently create challenges for our healthcare system.
- Future research should be focused on ways to eliminate racial and economic health disparities by expanding access to healthcare, advocating for policy change, and addressing social determinants of health.
- Future research with a larger sample size could also determine the efficacy of potential treatment options for COVID-19

References

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