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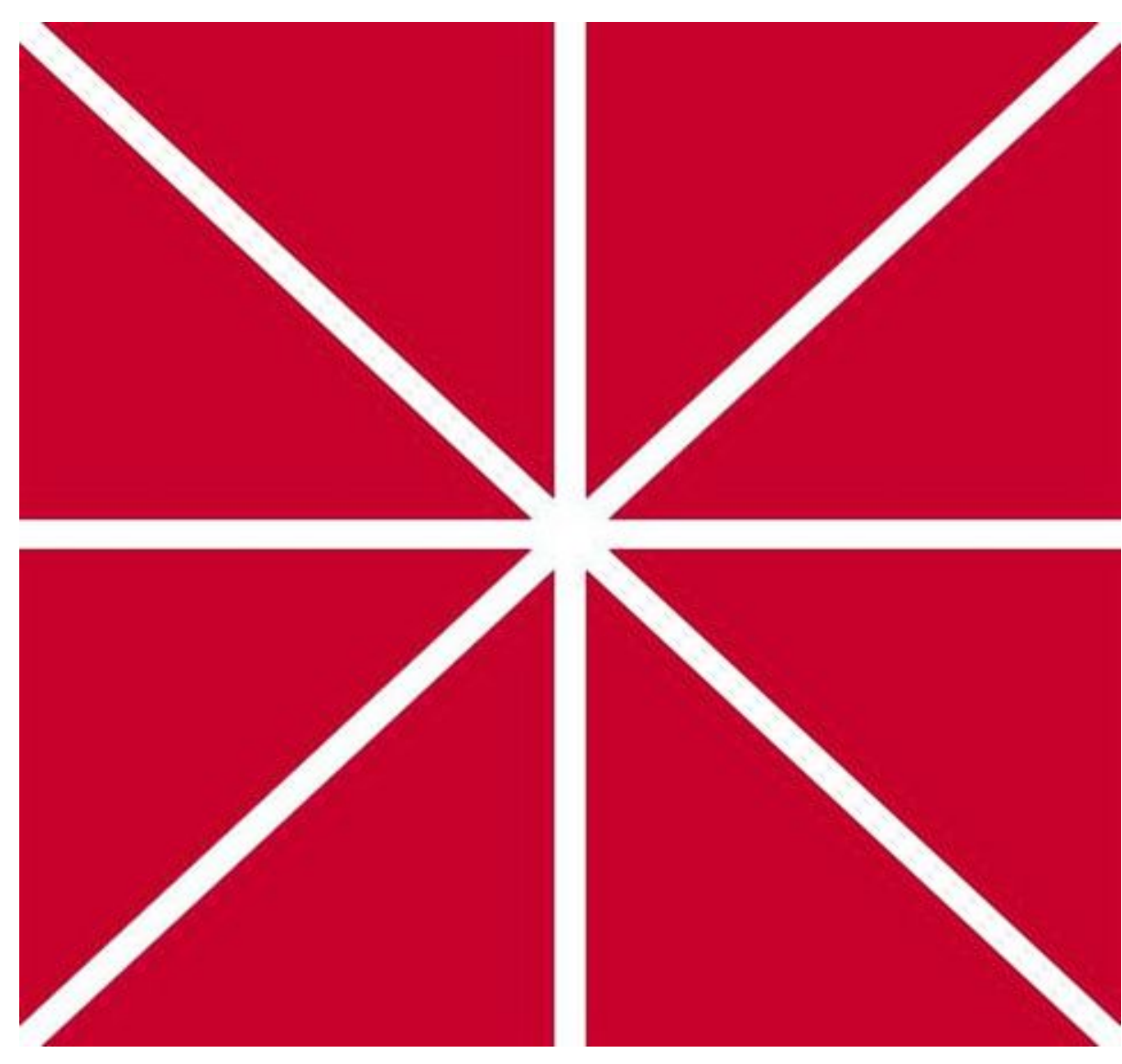
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The Effect of Stay-at-Home and Mask Mandate Policies on COVID-19 Hospitalization Rates in New York City Among Minority Populations

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INTRODUCTION

- The COVID-19 pandemic **highlighted health disparities and inequities** in minority communities.
- In New York State, racial and ethnic minorities suffer **worse** COVID-19 outcomes (Holtgrave et al., 2020).
- Other social determinants of health further **harm** individuals' health (Moore et al., 2020; Selden and Berdahl, 2020).
- Masks and social distancing practices have been found to be **effective** (Brooks and Butler, 2021).
- Germany implemented mask and facial covering mandates, which have **slowed the spread and changed social behaviors** (Betsch et al., 2020).
- To combat the increasing rate of COVID-related hospitalizations to protect all residents, New York enacted the following policies:
 - Stay-at-home order in March 2020
 - Mandatory mask/facial covering mandate in April 2020
- I hypothesized that minority populations in New York City would be associated with higher rates of COVID-19 hospitalizations despite health-protective policy implementation.

METHODS

Data:

- ZCTA-level demographic data on 177 New York City zip codes from the U.S. Census
 - Number of Black, Asian, Hispanic, and American Indian & Alaska Native (AIAN) individuals, poor English speakers, and noncitizens
- Number of COVID-19 hospitalizations in March, April, May, and June 2020 from NYC Health

Statistical Analysis:

- Multiple linear regression** –
 - Dependent variable – COVID-19 Hospitalizations per 100K Persons for May 2020
 - Independent variables – percent Black, percent Asian, percent Hispanic, percent AIAN, percent poor English, and percent noncitizen

RESULTS

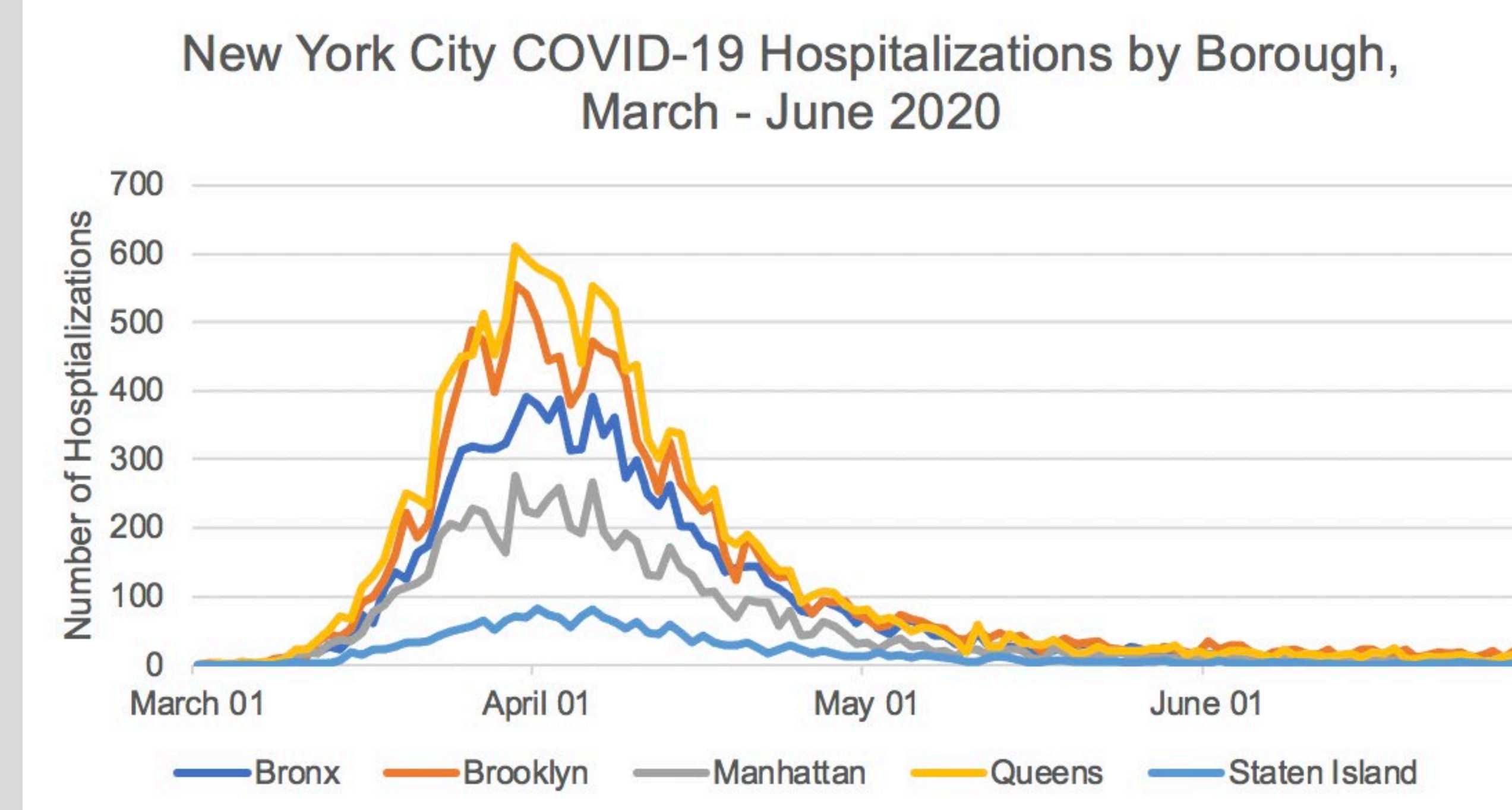


Table 1. Descriptive Statistics for May 2020.

	Mean	Standard Deviation	N
Hospitalization Rate	43.683	22.226	172
Percent Poor English	19.459	12.859	172
Percent Noncitizen	15.369	7.130	172
Percent Black	20.284	23.984	172
Percent AIAN	0.175	0.198	172
Percent Asian	14.641	14.143	172
Percent Hispanic	26.484	19.551	172

Table 2. Regression Output for Hospitalization Rate in May 2020.

	β	t	Significance
Percent Poor English	0.405	3.497	0.001
Percent Noncitizen	-0.047	-0.478	0.633
Percent Black	0.414	5.535	0.000
Percent AIAN	0.057	0.886	0.377
Percent Asian	-0.093	-0.825	0.411
Percent Hispanic	0.231	2.237	0.027

- The regression model was found to be significant, $p < 0.05$, adjusted $R^2 = 0.353$.
- Percent poor English observed a positive association with hospitalization rates, $p < 0.05$, while percent noncitizen did not observe a significant association, $p > 0.05$.
- Percent Black and percent Hispanic both observed positive associations with hospitalizations, $p < 0.05$.
- Percent Asian and percent American Indian & Alaska Native both did not observe significant associations, $p > 0.05$.

CONCLUSIONS

- Identifying as **Black, Hispanic or a poor English speaker were most predictive** of COVID-related hospitalization, regardless of the implementation of health-protective policies.
- Citizenship status was **not** as effective in predicting hospitalizations as race and ethnicity and ability to speak English.
- Mask mandate and stay-at-home policies appear to have **little to no effect** on hospitalizations among individuals who are nonwhite or speak poor English.
- Future research** must be conducted to understand why these and other minority populations suffer disproportionately during public health crises, such as the COVID-19 pandemic, in order to better support these communities and eliminate health disparities and inequities.

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