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Background

- Nearly 10% of US-born infants are preterm (<37 weeks) and preterm birth is a leading cause of neonatal mortality and morbidity with persistent racial and ethnic disparities [1].
- In 2022 the U.S. rate of preterm birth for non-Hispanic Black (NHB) women was ~ 50% higher than among non-Hispanic White (NHW) and Hispanic women [2].
- Several studies conducted during the COVID-19 pandemic found that the overall rate of preterm births decreased [3,4,5,6].
- However, few have analyzed the changes in preterm birth rate by sociodemographic factors and maternal race/ethnicity at the national level.

Objectives

This study sought to examine the outcomes of preterm birth, low birthweight, and cesarean delivery before and during the COVID-19 pandemic, as well as compare these prevalences across racial/ethnic groups with consideration of maternal residence regions and other sociodemographic factors.

Methods

- Our study used the Pregnancy Risk Assessment Monitoring System (PRAMS) data from the CDC.
- Maternal survey data are linked to birth certificate data; data are weighted to reflect state and national-level estimates of maternal and infant health experiences and outcomes.
- Periods:
 - Pre-Pandemic period: 1/2016-8/2019
 - Wash-out period: 9/2019-8/2020
 - Pandemic period: 9/2020-12/2022
- We excluded records with: birth weight (<300g), gestational age (<20 or >44 weeks), missing delivery method, missing maternal race/ethnicity
- We compared maternal and infant characteristics for the pre-COVID and COVID periods using χ^2 tests with significance at $p < 0.05$
- To explore changes in disparities between the pre-COVID and COVID periods we created a logistic regression model for each outcome.

Results

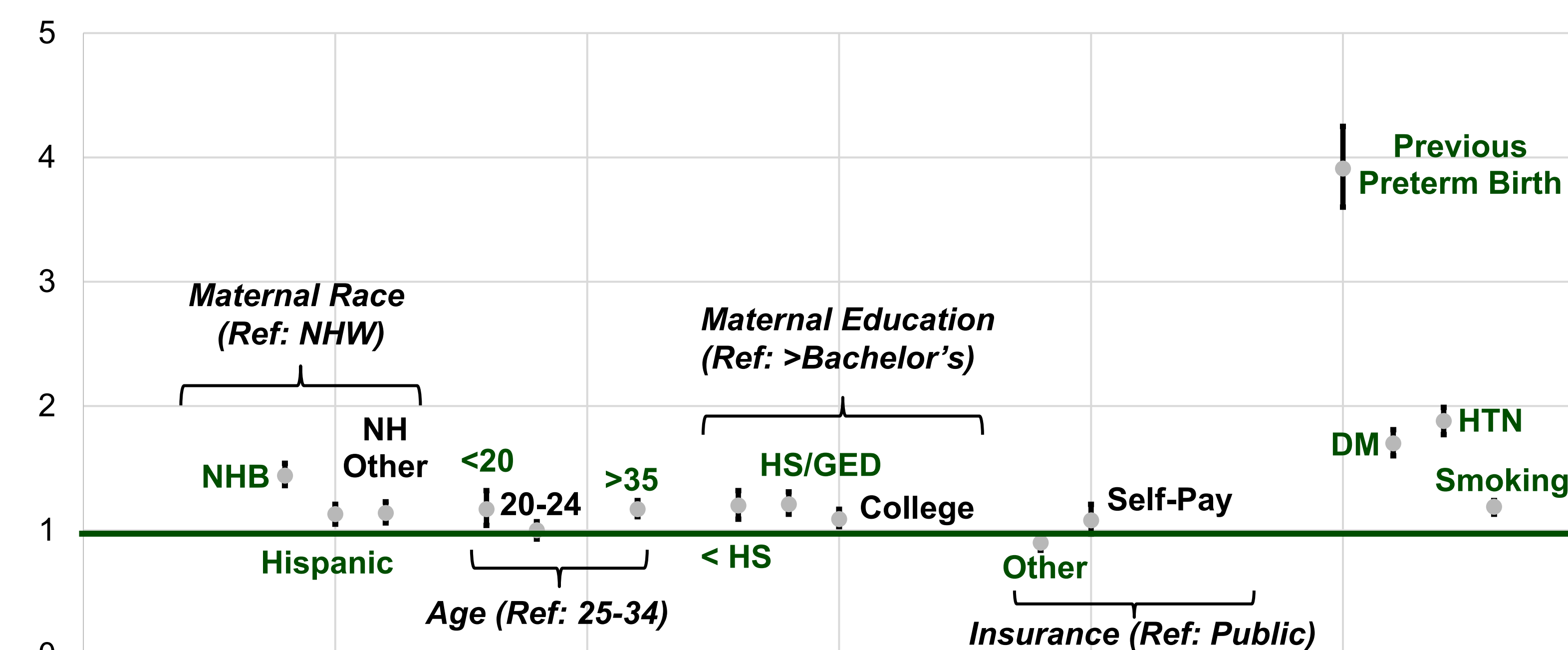
- The prepandemic period (2016-2019) included a total of 6,028,053 pregnancies (64% cohort), while the pandemic period (2020-2022) included a total of 3,390,228 pregnancies (36% cohort).

Table 1: Cohort and Outcomes

	2016-2019	2020-2022	p-value
Preterm birth (< 37 weeks)	7.7%	8.0%	0.0432
Cesarean Delivery	29.7%	29.6%	0.7355
Low Birthweight (< 2500g)	6.1%	6.5%	0.0037

- Compared with births in pre-COVID period, there was a slightly higher proportion of Hispanic mothers giving birth, mothers aged ≥ 35 years, mothers with diabetes, and mothers with hypertension during COVID.
- There was a decrease in maternal smoking during pregnancy during COVID.

Figure 1: Adjusted Odds of Preterm Birth w/95% CI*



NHW = Non-Hispanic White, NHB = Non-Hispanic Black, HS = High School, DM = Diabetes Mellitus, HTN = Hypertension

- *Results shown for preterm birth; however, data is very similar for low birth weight.
- For cesarean delivery Non-Hispanic Black mothers, mothers ≥ 35 years and mothers with either previous preterm birth, diabetes, hypertension or smoking had greater odds for cesarean delivery.

Table 2: Interaction of Time & Race in Predicting Low Birth Weight

Race*Time	Estimate	p-value
Hispanic	0.0409	0.0188*
Non-Hispanic Black	0.0073	0.6882
Non-Hispanic Other	-0.0483	0.0137

- No significant interaction for preterm births and cesarean births

Limitations

- Retrospective data collected through maternal surveys
- Lack of post-pandemic data to measure outcomes following pandemic
- Lack of experiential data to identify drivers of persistent disparities

Conclusions

- While disparities did not exacerbate over time, Non-Hispanic Black and Hispanic mothers continued to have less favorable perinatal health outcomes compared to Non-Hispanic White mothers.
- Disparities also persisted for mothers with less education and those with public insurance.
- During the COVID pandemic there was a decrease in low birthweight prevalence in the Hispanic group.
- Additional research is needed to identify and address perinatal experiences and outcomes among disadvantaged groups during extraordinary exposures such as pandemics and natural disasters.

References

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