

INTRODUCTION

Preterm Birth is defined as infants born prior to 37 weeks gestational age. Black ethnicity is a well-known risk factor for PTB. Studies have sought to explain this multifactorial complexity through biological, psychosocial, microbiome, genetic, and epigenetic factors. Additionally, COVID-19 has disproportionately impacted minorities with African Americans being 1.4 times more likely to die from COVID-19 than whites. Research that explored the impact of PTB and COVID-19 found that during the COVID pandemic there was a significant increase in PTB among Black and Puerto Rican women [1]. While the association between PTB and COVID has been identified, it is important for us to understand the factors that are associated with this increase.

MATERIALS & METHODS

We are performing a retrospective cohort study of African American and Caucasian women ages 18-35 who gave birth at Vidant Medical Center between January 1, 2018 and February 1, 2021. We chose a timeframe that includes births before and during the COVID-19 pandemic in order to assess the impact that COVID had on prenatal care and preterm births.

- **Exclusion criteria:** Women who experienced intrauterine fetal demise or birth at less than 20 weeks gestation

Additional parameters we will collect:

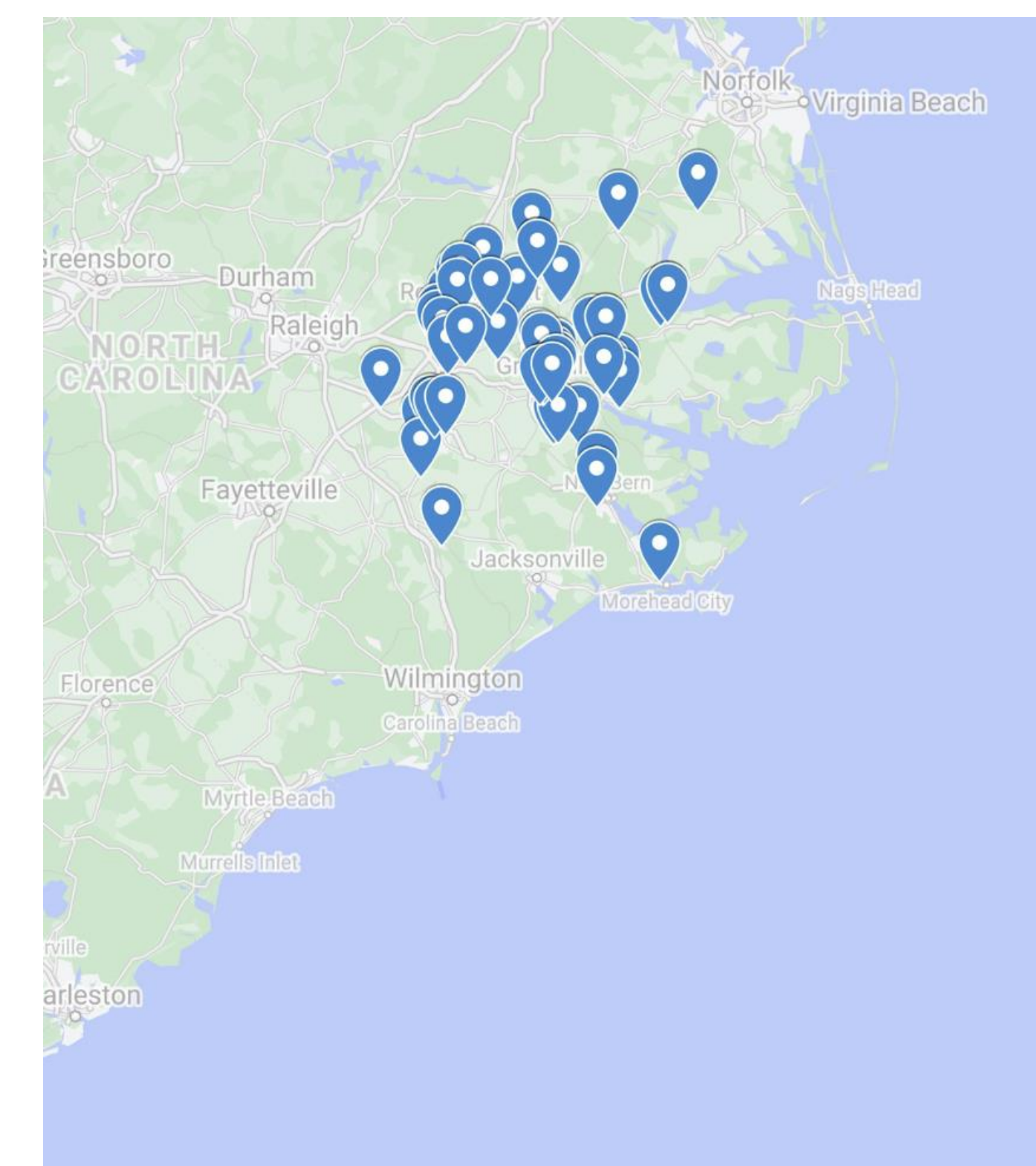
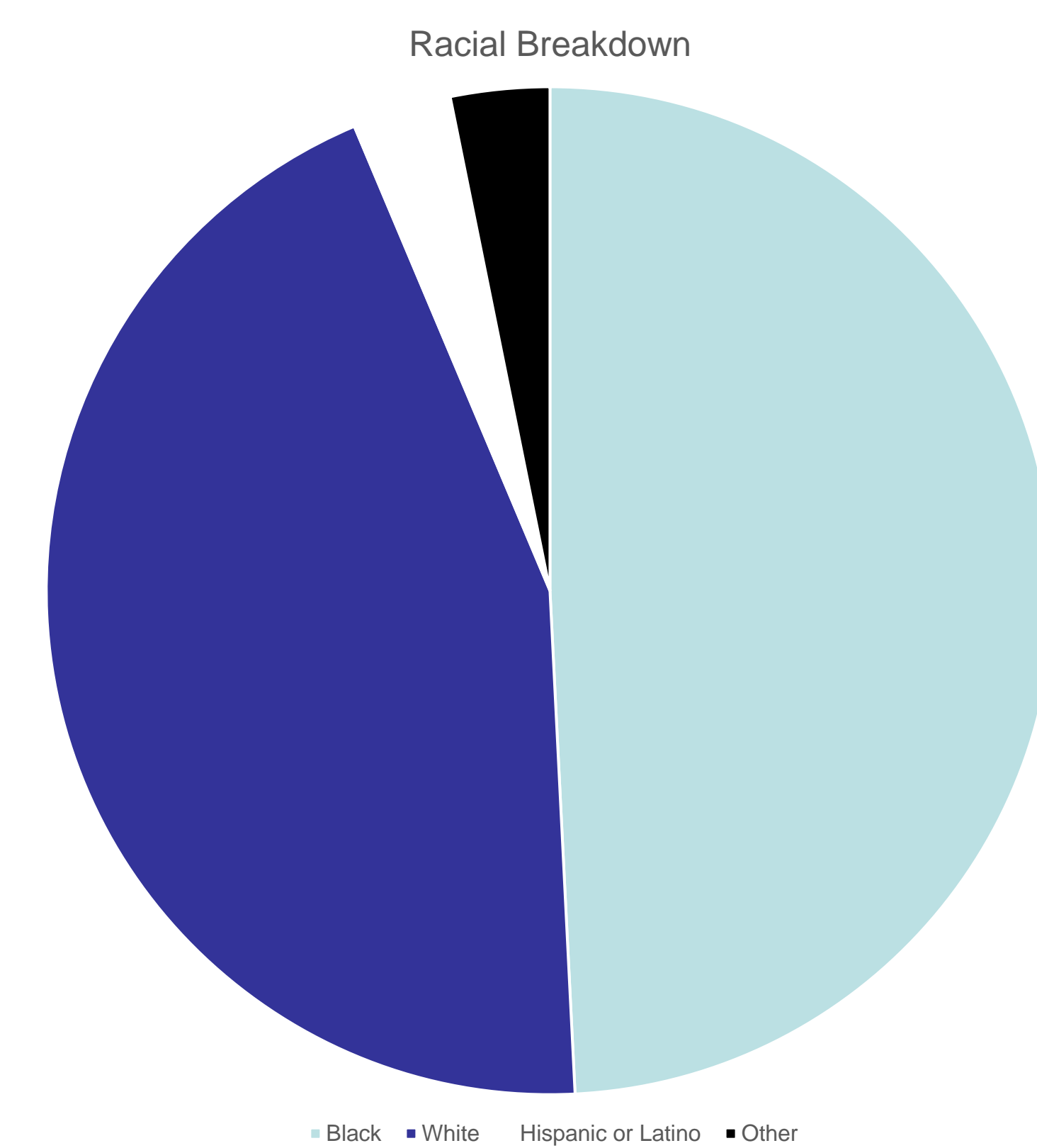
- CBC values, maternal age, BMI, gravidity, parity, abortions, gestational age at delivery, birth weight, vitals, city, zip code, pre-eclampsia diagnosis, PHQ-9, race/ethnicity, insurance, CBC with differential values on admission, pregnancy complications

RESULTS

To obtain some preliminary results, we analyzed data from 62 female patients (n=62) who delivered at Vidant Medical Center in January 2021. 31 patients identified as Black (50%), 28 patients identified as White (45%), 2 patients identified as Hispanic or Latino (3%), and 2 patients identified as Other (3%). The average maternal age was 28.7 years. 41% of the patients delivered via normal spontaneous vaginal birth and 56% delivered via cesarean section.

One of the three aims of this study is to determine if African American women faced greater social vulnerability during COVID-19, leading to adverse pregnancy outcomes like preterm birth. Social vulnerability was measured using the CDC's Social Vulnerability Index (SVI). The average SVI for African American women (n=31) included in our sample was 0.65, indicating a moderate to high level of vulnerability.

Another aim is to determine if certain CBC values (ex. WBC, RBC, hemoglobin) can be used to predict incidences of preterm birth. On average, African American women presented with an elevated WBC of 13.8 k/uL (ref. range: 4.50-11.00 k/uL) and an elevated RDW of 15.2% (ref. range: 11.5-14.5%). African American women also presented with decreased hemoglobin and hematocrit. The average hemoglobin was 10.7% (ref. range 12.0-16.0%) and the average hematocrit was 32.6% (ref. range 35.0-47.0%).



DISCUSSION

Because we only received data from patients who gave birth during COVID-19, we were unable to compare CBC values in African American women before COVID vs during COVID. These aims will be addressed when we receive more data from Vidant Medical Center. We hypothesize that further research will show an increase in CBC and SVI values amongst African American women during COVID. We believe that specific CBC values will be useful as markers of inflammation, a potential cause of PTB. Further analysis of the existing data needs to be done to determine the statistical significance of these findings.

REFERENCES

1. Craig, A., Dotters-Katz, S., Weaver, K., Gilner, J., Swamy, G., Hughes, B., & Wheeler, S. (2021). Preterm birth disparities at a single United States academic institution during the COVID pandemic. *American Journal of Obstetrics & Gynecology MFM*, 224(2). <https://doi.org/10.1016/j.ajog.2020.12.099>

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