

# Learning to work with big data: A practicum geared toward understanding Racial and Socioeconomic Disparities in Psychiatric Readmission Risk





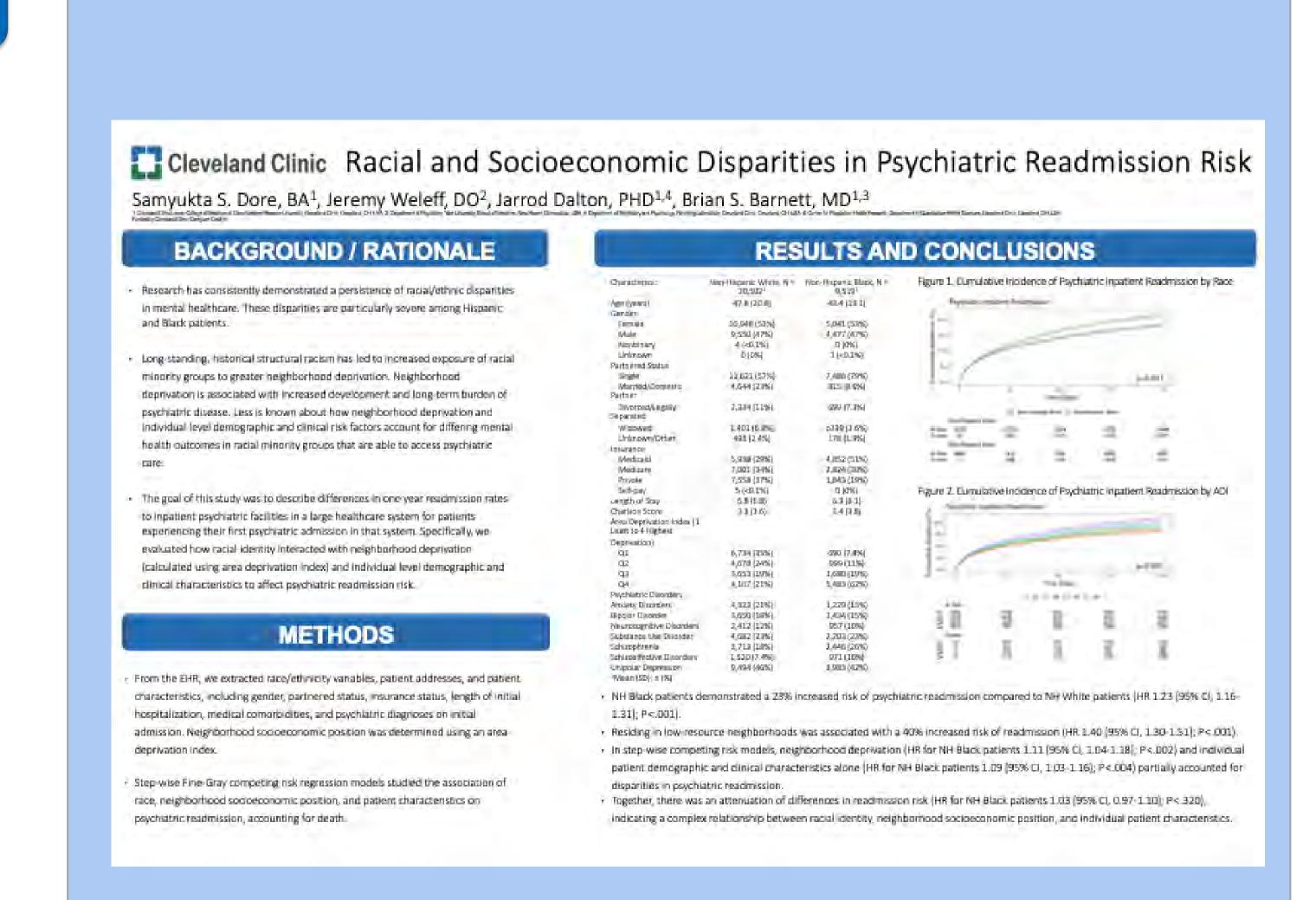
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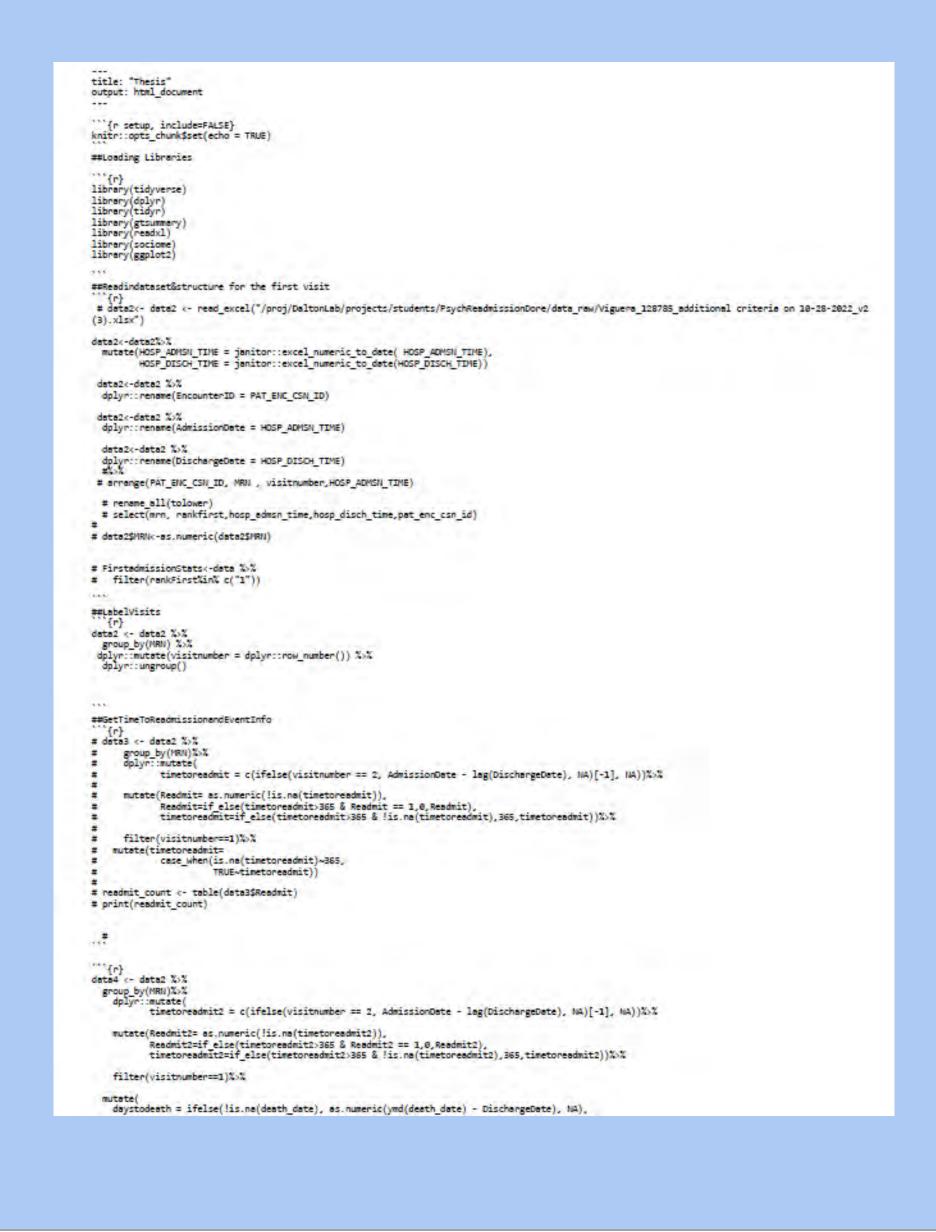
#### BACKGROUND / RATIONALE FOR THE PROJECT

- Research has consistently demonstrated a persistence of racial/ethnic disparities in mental healthcare. These disparities are particularly severe among Hispanic and Black patients.
- Long-standing, historical structural racism has led to increased exposure of racial minority groups to greater neighborhood deprivation. Neighborhood deprivation is associated with increased development and long-term burden of psychiatric disease. Less is known about how neighborhood deprivation and individual level demographic and clinical risk factors account for differing mental health outcomes in racial minority groups that are able to access psychiatric care.
- The goal of this practicum was to develop the skills necessary to develop and to utilize a large data set of 10 years of in-patient psychiatric data from Cleveland Clinic hospitals to evaluate how racial identity interacted with neighborhood deprivation (calculated using area deprivation index) and individual level demographic and clinical characteristics to affect psychiatric readmission risk.

#### LEARNING OBJECTIVES

- In order to work with a large data set of over 33,000 patients, I had to learn how to format, clean and assemble a large data set and then to take that data set from raw data to results.
- To this end, I wanted to learn to code in R and learn statistical methods
  that were applicable to this data. In addition, I needed to learn how to
  access and take advantage of nationally available data to generate an
  area deprivation index or a metric of area-based socioeconomic
  position.





# DELIVERABLES

- 1. The code that I developed to analyze this project
- 2. A poster based on my project that featured my results and findings presented at the Cleveland Clinic Lerner College of Medicine Research Day

### LESSONS I LEARNT

- I learnt the challenges of being able to thoughtfully utilize big data from having to make decisions on what inclusions and exclusions to make to more practical yet even more critical steps like making sure your code is actually doing what you are expecting it to do.
- I learnt how to take advantage of the presence of a larger group of public health and medical researchers who have already worked on a lot of ways to solve problems and that helped me in not having to continually re-invent the wheel.

## PUBLIC HEALTH IMPLICATIONS

For a public health career, there is an increasing need to work with increasingly large and more complex data and to utilize this data quickly to answer questions. Through my practicum, I learnt the important skill of thinking through how to code which I think will serve me well in working with any data thoughtfully for future public health work.

#### ACKNOWLEDGEMENTS

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