Drug and Substance Abuse Treatment

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Introduction

Source: Center for Behavioral Health Statistics and Quality Substance Abuse and Mental Health Services Administration

Data: Treatment Episode Data Set- Admissions for 2016 (1,699,261 observations, 62 variables)

Each observation represents a person being admitted for substance or drug abuse to a publicly funded facility. Omitted from this data were the states Georgia and Oregon, because they did not report sufficient data in 2016.

Introduction

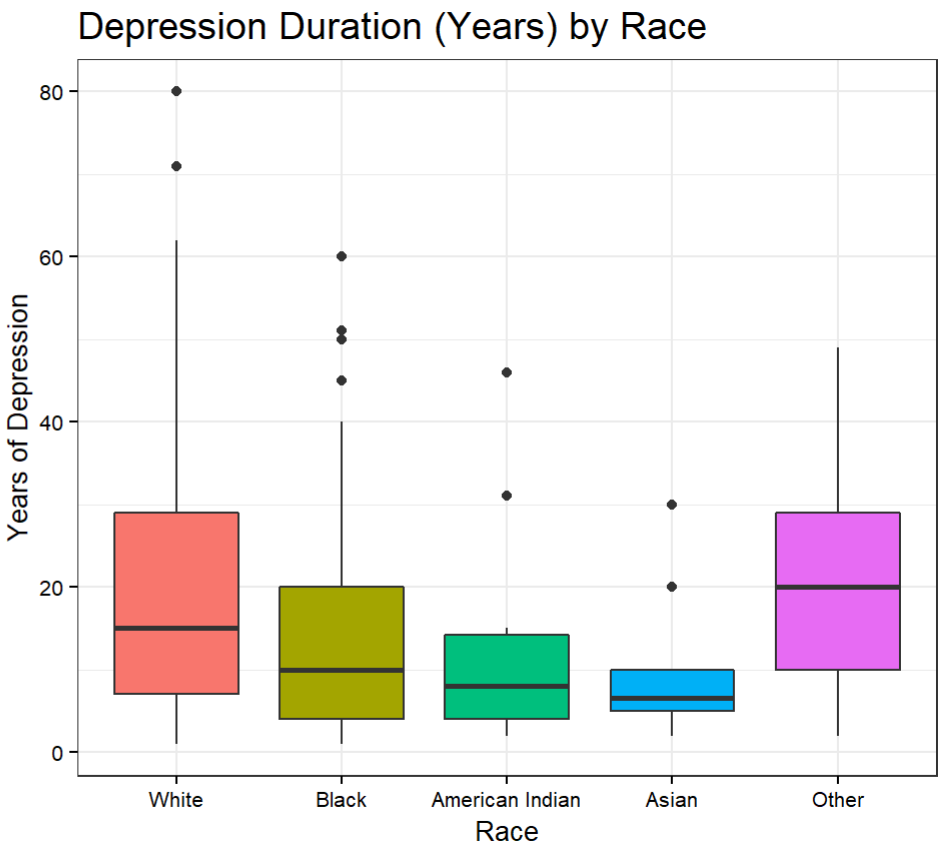
Secondary Data
Source: Centers for Disease Control and Prevention (CDC)

Data: National Health Interview Survey (NHIS) (33,208 observations, 805 variables)

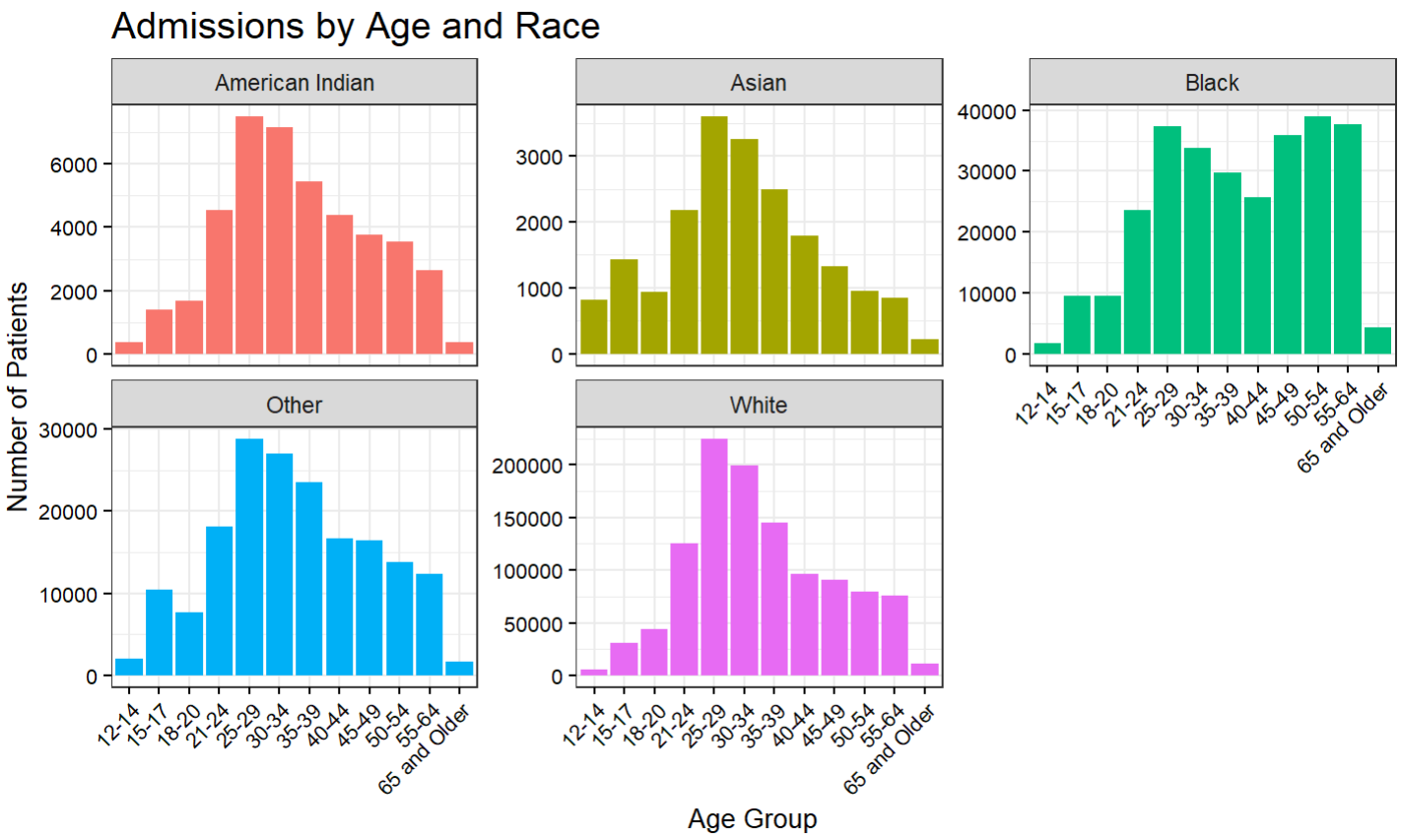
Each observation represents a person being interviewed about their health status including physical, and mental health.

Mental Health & Substance Abuse

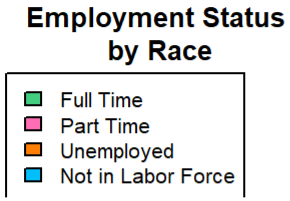
Depression Status	Proportion
Depression	0.39
No depression	0.61

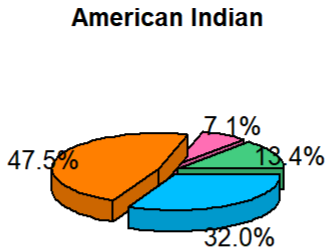


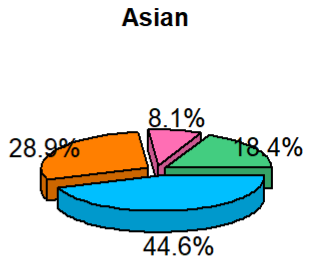
Age

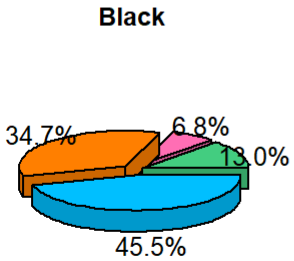

Admissions by Age and Race
American Indian
Asian
Black
Other
White
Number of Patients
Age Group
12-14
15-17
18-20
21-24
25-29
30-34
35-39
40-44
45-49
50-54
55-64
65 and Older

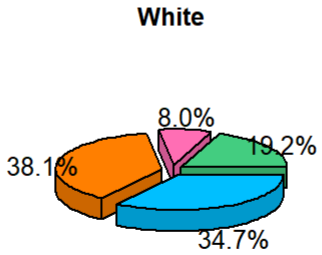
Employment Status

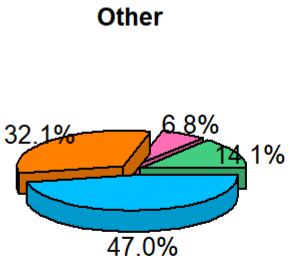












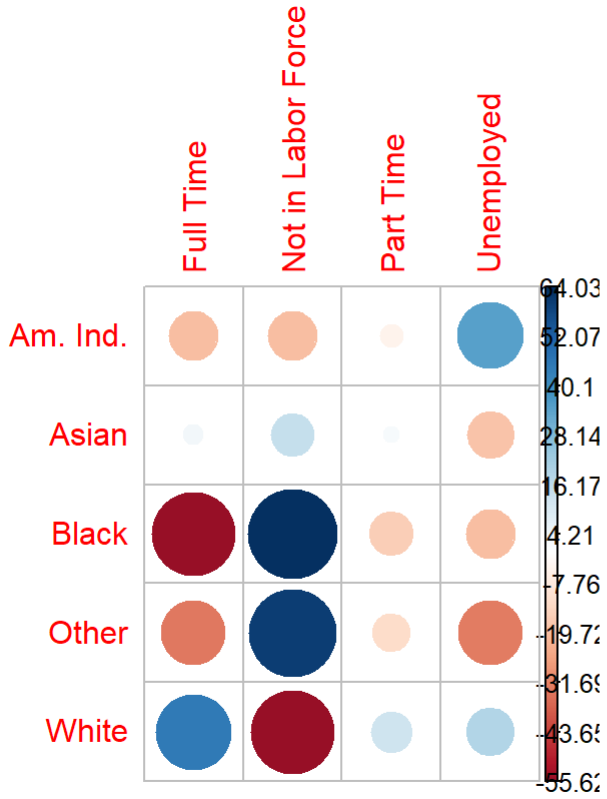
Chi-Square Hypothesis Test

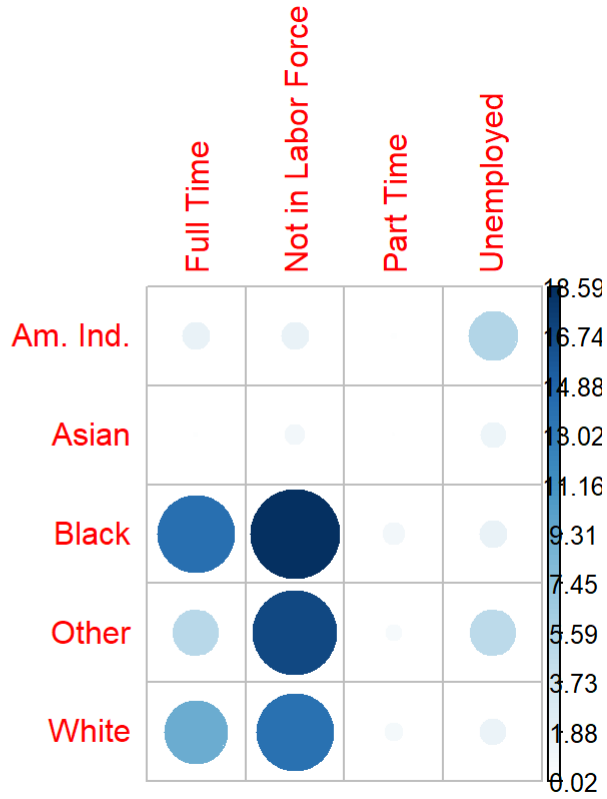
The assumptions of the test, all of which were met, were that:

1. We were analyzing count data
2. Variables were mutually exclusive
3. Each subject contributed to only one cell
4. Independence
5. Categorical data or (as we will see later) interval collapsed data
6. Expected value of at least 80% of cells was greater than or equal to 5
7. Expected value of all cells was greater than 1

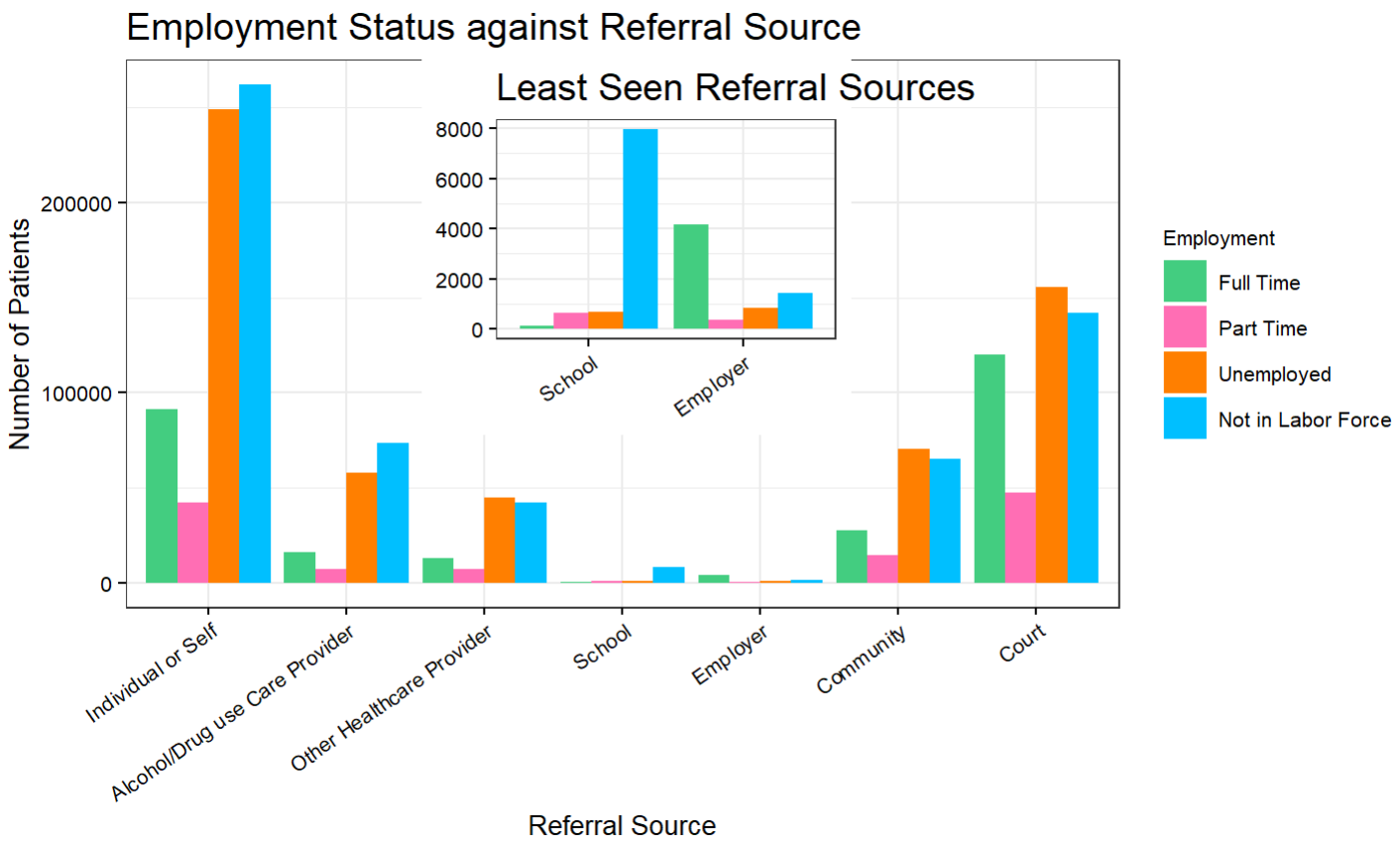
Our null hypothesis is that no association exists among the two categorical variables, and our alternative is that there is at least one association.

Correlation Plots

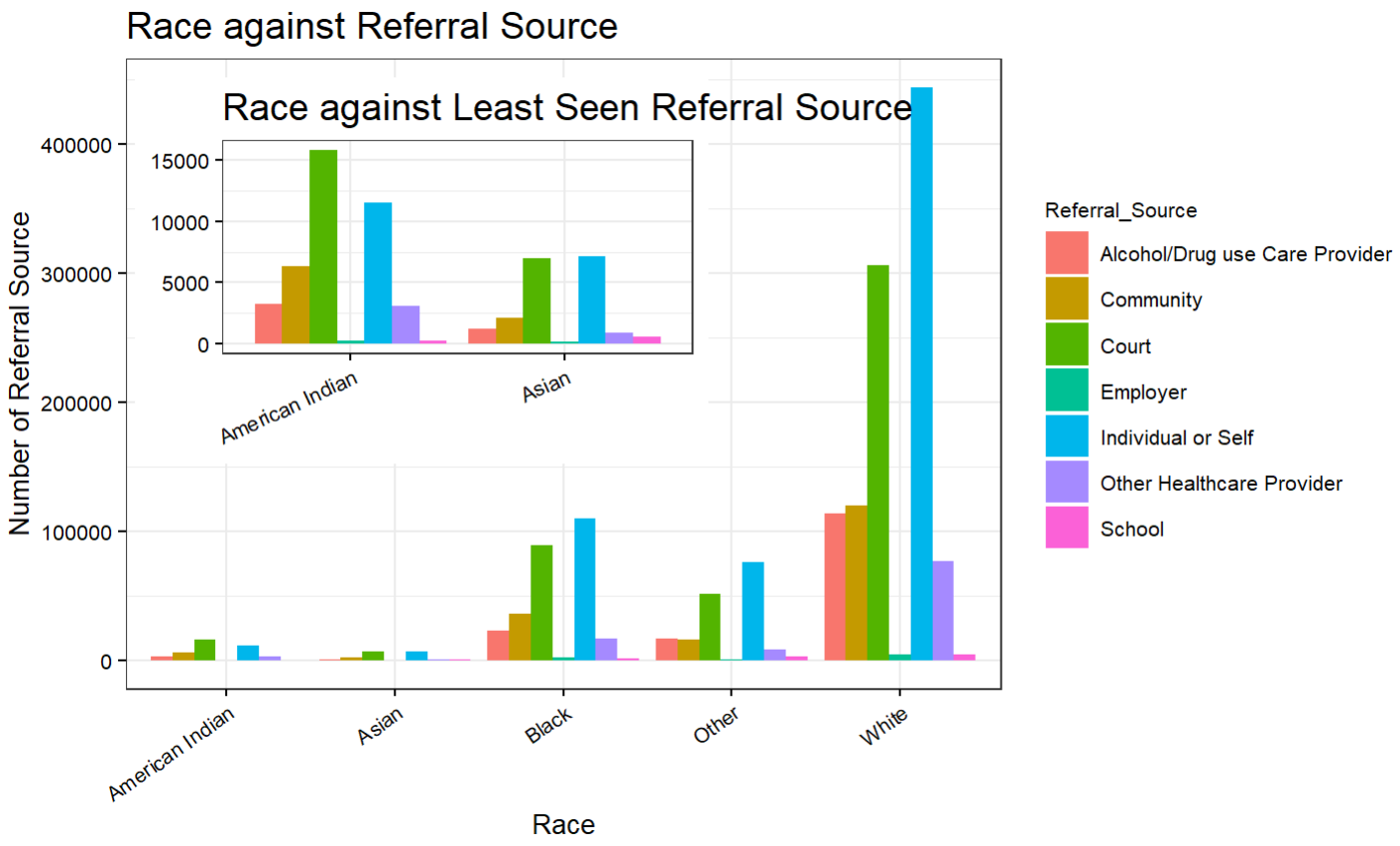




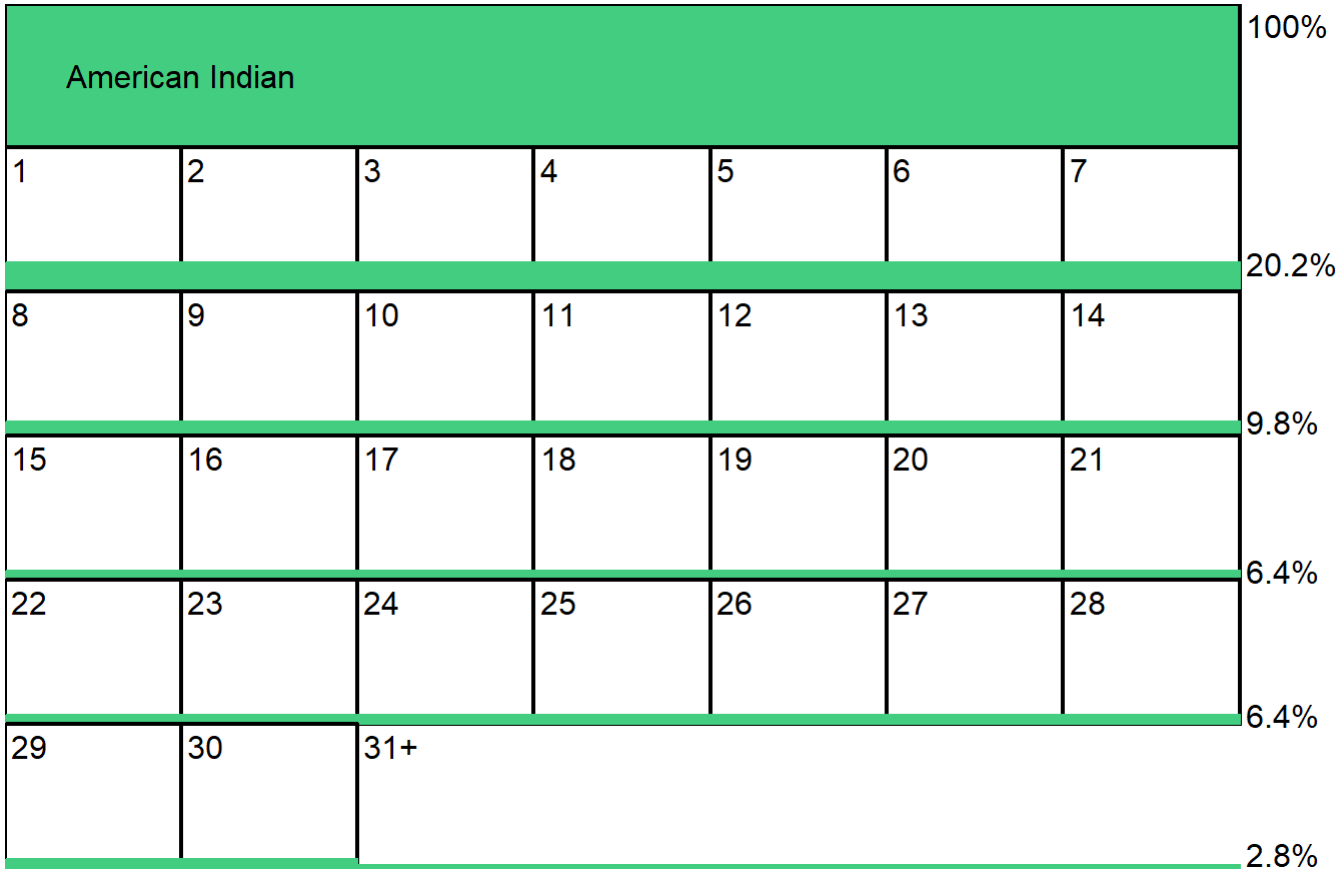
Referral Source by Employment Status

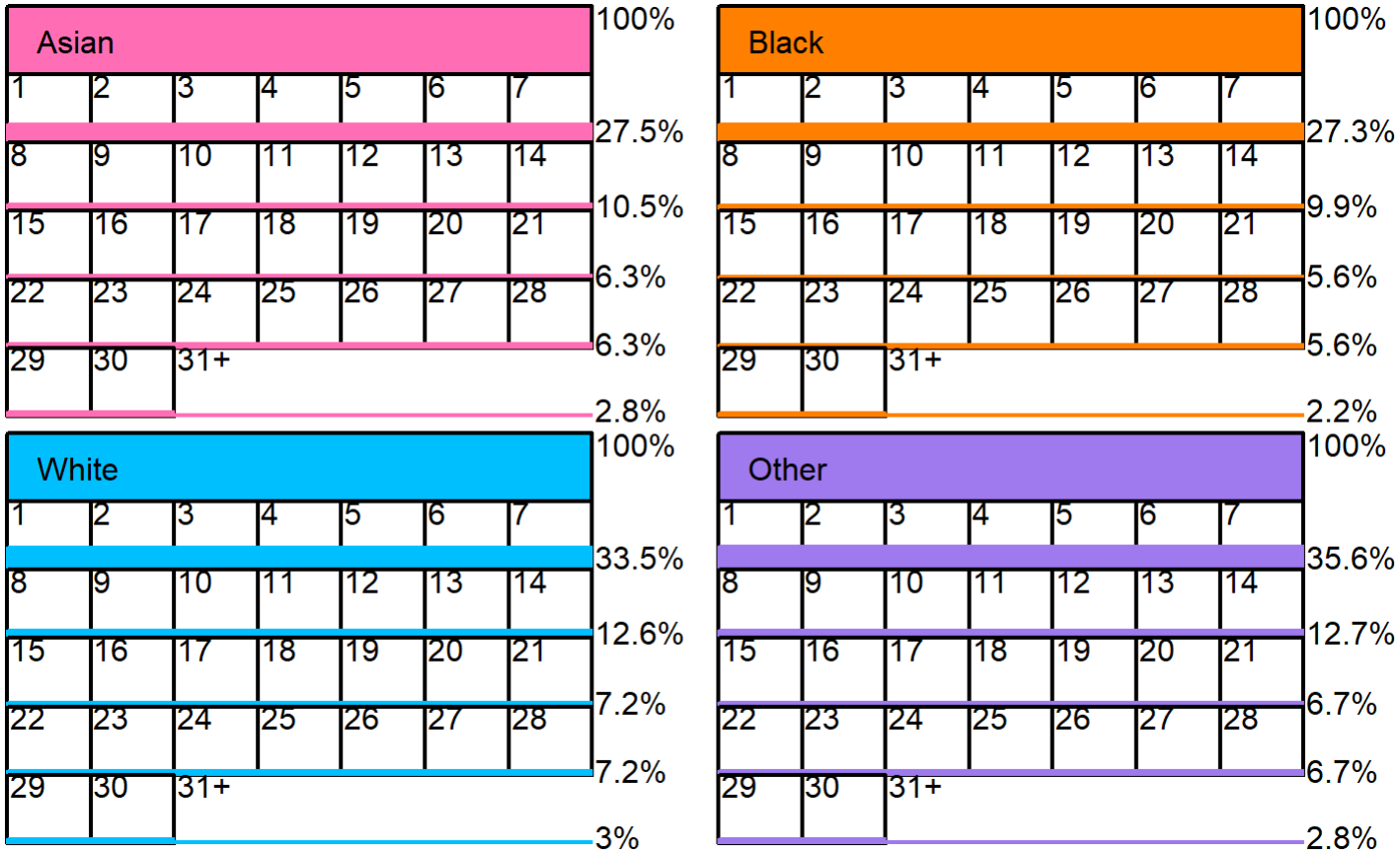


Race against Referral Source

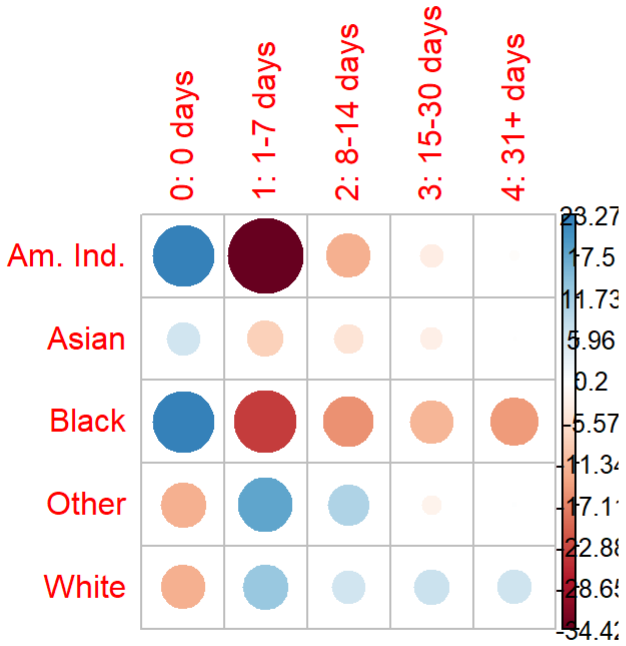


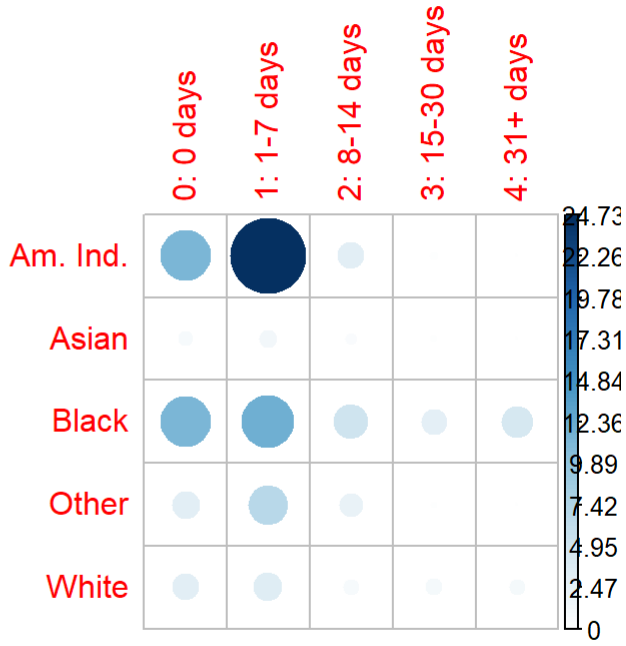
Accessibility to Treatment (Daywait)




Asian
1 2 3 4 5 6 7
27.5%
8 9 10 11 12 13 14
10.5%
15 16 17 18 19 20 21
6.3%
22 23 24 25 26 27 28
6.3%
29 30 31+
2.8%
100%
Black
1 2 3 4 5 6 7
27.3%
8 9 10 11 12 13 14
9.9%
15 16 17 18 19 20 21
5.6%
22 23 24 25 26 27 28
5.6%
29 30 31+
2.2%
100%
White
1 2 3 4 5 6 7
33.5%
8 9 10 11 12 13 14
12.6%
15 16 17 18 19 20 21
7.2%
22 23 24 25 26 27 28
7.2%
29 30 31+
3%
100%
Other
1 2 3 4 5 6 7
35.6%
8 9 10 11 12 13 14
12.7%
15 16 17 18 19 20 21
6.7%
22 23 24 25 26 27 28
6.7%
29 30 31+
2.8%
100%

Correlation Plots





Drug Experience

Introduction

We scraped 1,083 Reddit comments from a page where drug users talked about what drugs they have tried and how they felt.

Positive/Negative Word Association

Mining Reddit comments to determine emotions and experiences.

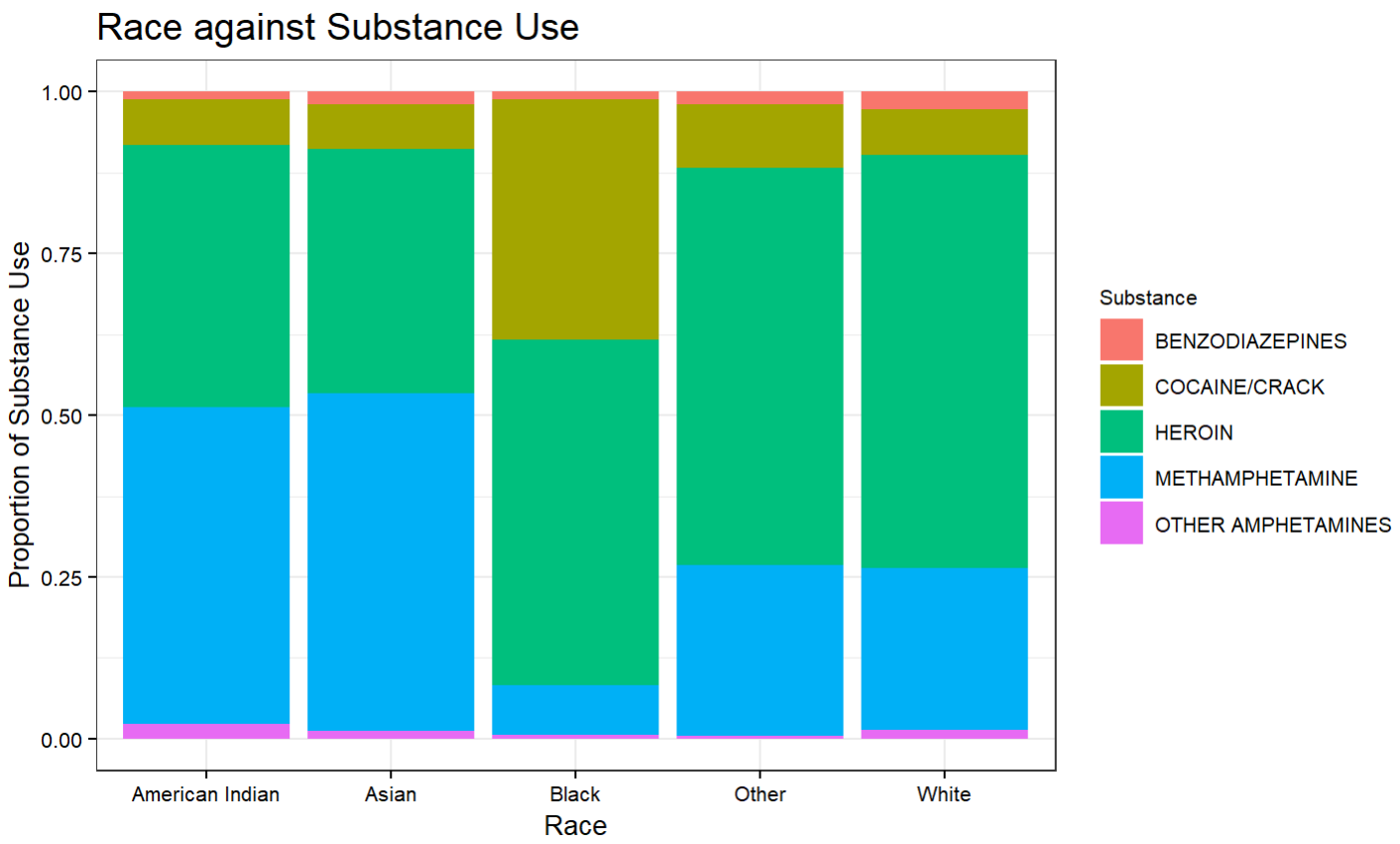
Positive: joy, happy, amazing, incredible, satisfaction
Negative: fear, scary, hate, regret, miserable

Drug Experience

Benzodiazepines includes Xanax, Diazepam, Valium.
Other amphetamines includes speed, adderall, ritalin.

Drug	Positive Words Proportion	Negative Words Proportion
Meth	0.08	0.36
Benzodiazepines	0.17	0.21
Other Amphetamines	0.15	0.30
Cocaine	0.11	0.24
Heroin	0.26	0.41

Admissions by Drug



Conclusion

- White and Other races suffer from depression the longest
- The age that Black patients are admitted does not taper down in older years, but instead seems bi-modal with a second peak at ages 50-54
- Most patients are unemployed/not in labor force
- Self-referral & court-referral were most common
- Strongest negative correlation for race and wait time is between the American Indian race and wait time of 1-7 days
- Most races were admitted for heroin and meth, and heroin had highest proportion of positive experiences