Gender and Race Based Discrimination in Disability Care

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Outline

- Motivation
- Brief Literature Review
- Research Questions
- Data
- Methods
- Results
- Limitations/Next Steps

Motivation

- Analyzing discrimination in quality of care (the race and gender of the patient)
- Overall discrimination in healthcare (unequal care among disabled individuals)

Literature Review

- Gender disparities in healthcare for disabled: Disparities in health care access for women with disabilities in the United States from the 2006 National Health Review Survey https://pubmed.ncbi.nlm.nih.gov/21122715/
- Racial disparities in healthcare for disabled: Assuring Health Equity for Minority Persons with Disabilities https://minorityhealth.hhs.gov/Assets/pdf/Checked/1/ACMHHealthDisparitiesReport.pdf
- Beyond Misdiagnosis, Misunderstanding and Mistrust: Relevance of the Historical Perspective in the Medical and Mental Health Treatment of People of Color https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2574307/pdf/jnma00207-0025.pdf
- Training physicians about caring for persons with disabilities: "Nothing about us without us!" https://www.sciencedirect.com/science/article/pii/S1936657412000441

Research questions

- **Aggregating / Visualizing:** To what extent are there discrepancies in quality of care among disabled individuals of different races and genders?
- **Topic Modeling / Extracting Top words:** What services and types of care are most lacking among various demographics of people?

Data sources

- **Datasets Used:** FEIS Survey Responses, Demographics Data
- **Unit of Analysis:** FEIS survey responses - both multiple choice (about quality of care) and family advice for patients
- **Relevant Variables:** Gender, Race

Methods: data acquisition

- We used data provided directly by START and sent to us by Professor Johnson.
- Based on the research questions regarding quality of care between patients of different demographic groups, we decided that patient family feedback fields were the most relevant fields to examine.

Methods: data cleaning

```
# Cleaning the demographics dataset
demographics = demo_df[['Local ID', 'Region', 'Date Enrolled in START', 'Gender', 'Race', 'Date of birth', 'Ethnicity',
                        'Level of Intellectual Disability', 'Psychiatric diagnoses', 'Medical diagnoses',
                    'Other Disabilities','Funding']]

# Merging datasets
merged = pd.merge(demographics, FEIS_df, how = 'inner', left_on = ['Local ID'],
                  right_on = ['Respondent ID #  (SIRS Local ID)'])
merged_short_answer = merged[['Gender', 'Race', 'Local ID',
                        'What\nadvice would you give to service planners regarding the mental health service\nneeds
                        "Was there any particular service that your\nfamily member needed that was not available?",
                        "If yes, please describe the service."]]

merged_short_answer.columns = ['Gender', 'Race', 'ID', 'Advice', 'Missing Service', 'Service Needed']
merged_short_answer

# Subsetting by gender
demographics_male = merged_short_answer.loc[merged_short_answer['Gender']=='Male']
demographics_female = merged_short_answer.loc[merged_short_answer['Gender']=='Female']

# Subsetting by race
male_white = demographics_male[demographics_male['Race'] == "White"]
male_nonwhite = demographics_male[demographics_male['Race'] != "White"]

female_white = demographics_female[demographics_female['Race'] == "White"]
female_nonwhite = demographics_female[demographics_female['Race'] != "White"]

def process(string):
    string_lower = string.lower()
    #string_lower
    tokens = word_tokenize(string_lower)
    tokenize_string = [s for s in tokens if not s.lower() in stop_words]
    #tokenize_string
    alpha_string = [re.sub('[^A-Za-z]+', '', s) for s in tokenize_string]
    #alpha_string
    stem_string = [snowball.stem(s) for s in alpha_string]
    #stem_string
    final_string = " ".join(stem_string)
    #final_string
    return final_string
```

Methods: analysis and visualization

Part 1: Identifying Discrepancies in Care

- Aggregating on different questions on the FEIS dataset to get a sense of satisfaction with care

Part 2: Identifying Areas of Need for Different Demographics

- Creating a document-term matrix
- Getting the top words of Advice from families
- Returning three topics relevant to client needs
- Visualizing using pYLDavis

Results: in words

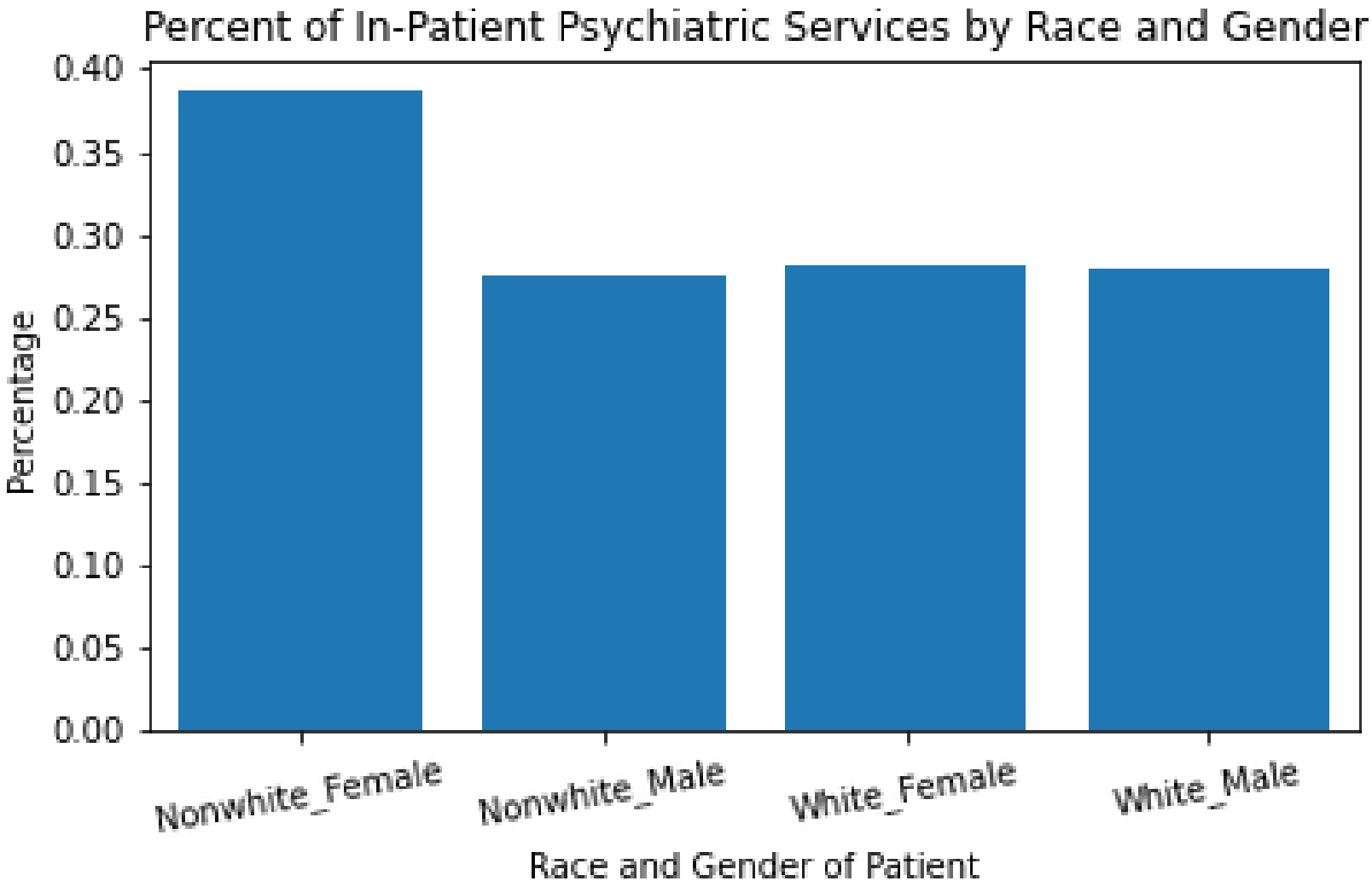
Part 1: Identifying disparities in care

- Observed specific discrepancies by race and gender according to reporting from the family members of patients
- Caveat: Cannot gauge individual nuance of the answers

Part 2: Topwords/topics for different demographics

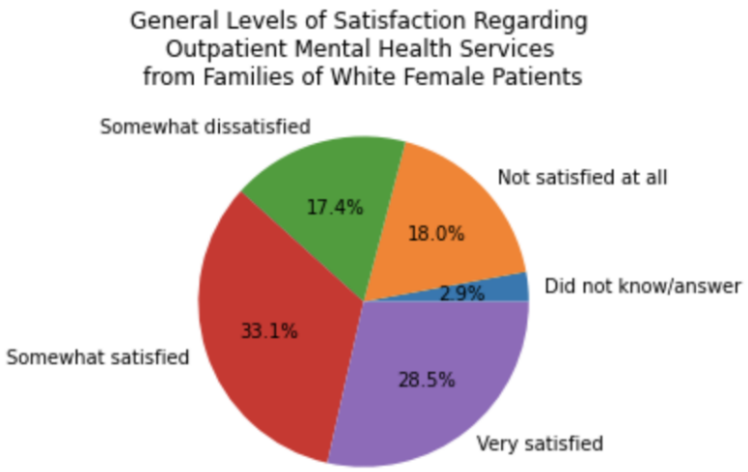
- Caveat: Common overall words - difficult to divide topics/topwords
- Particular Keywords: *mental*, *individual*, *none*, *listen*, *access*

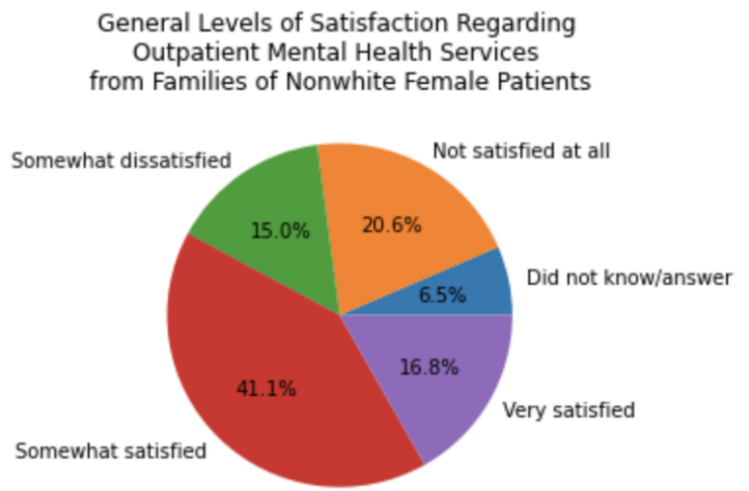
Part 1 Results: fig 1

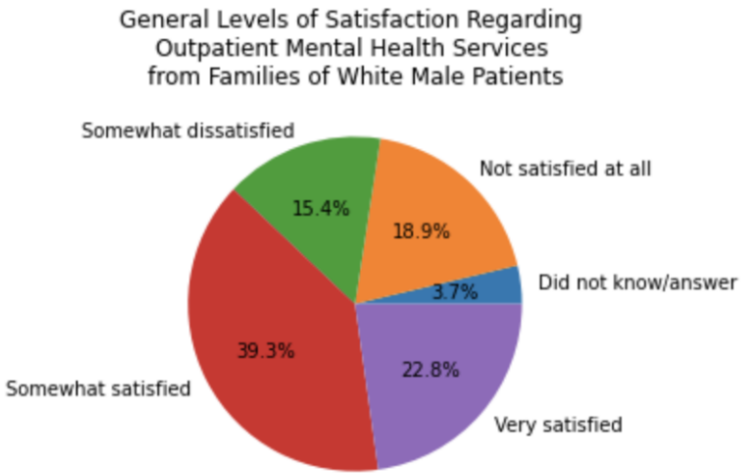


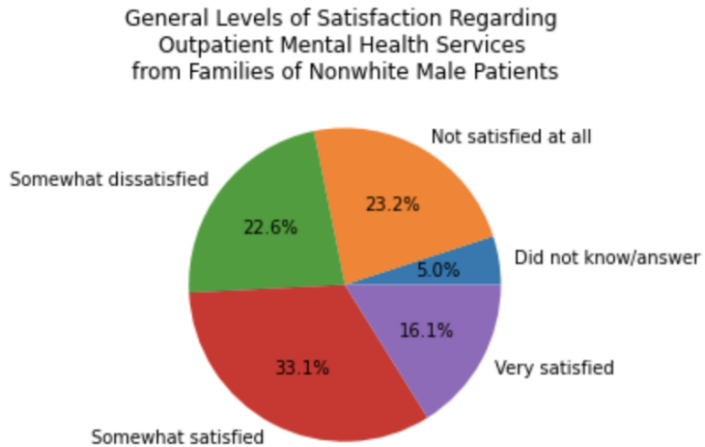
Part 1 Results: fig 2

Part 1 Results: fig 2A





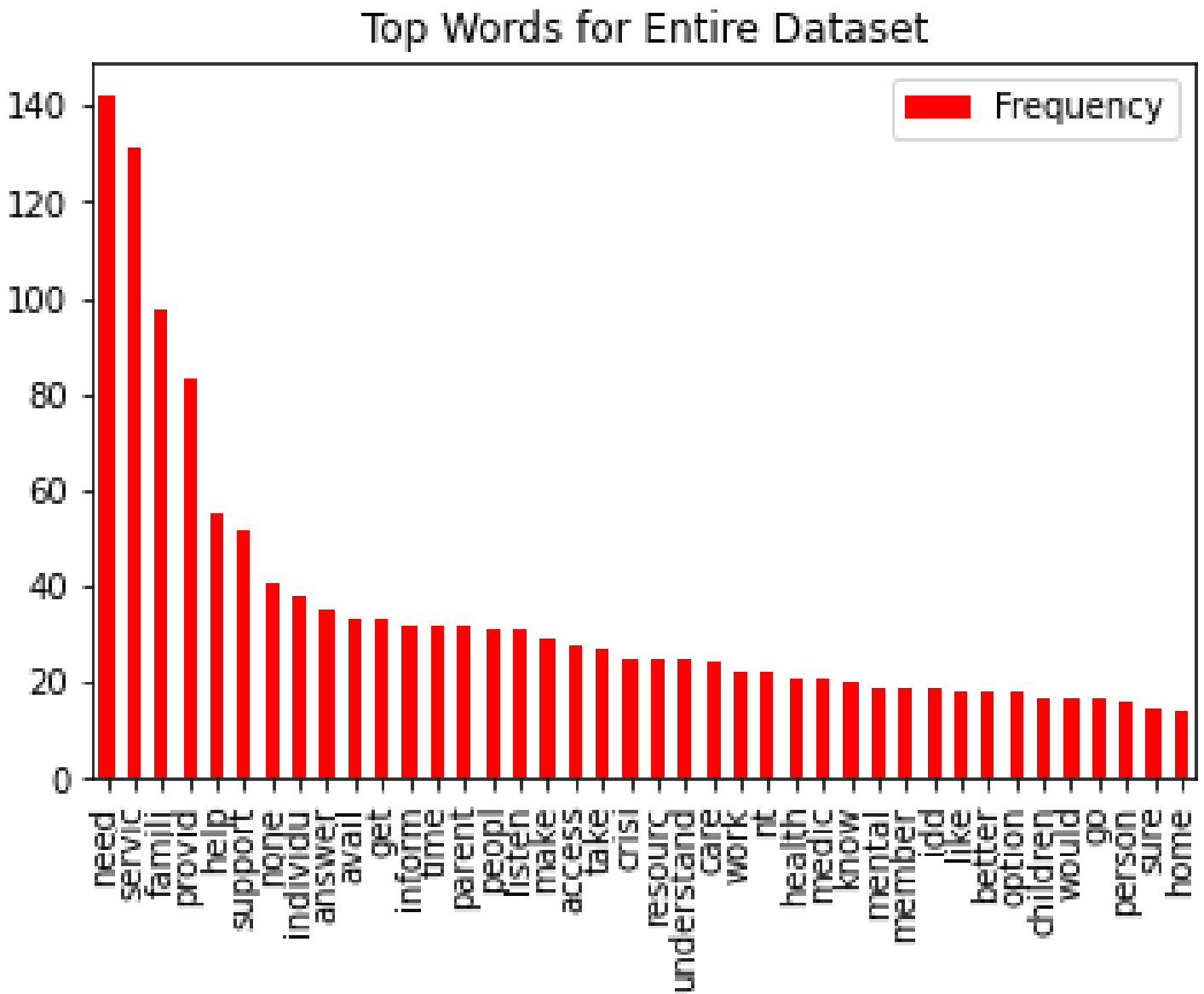




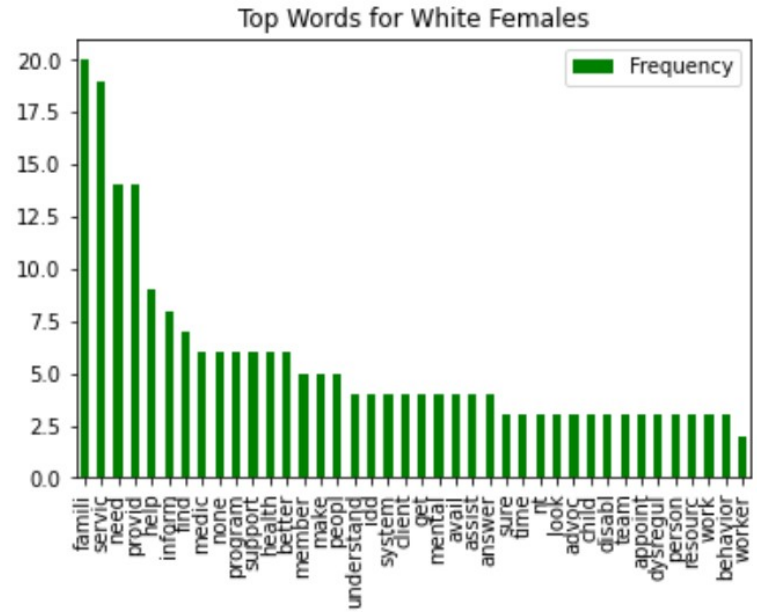
Discussion: Part 1

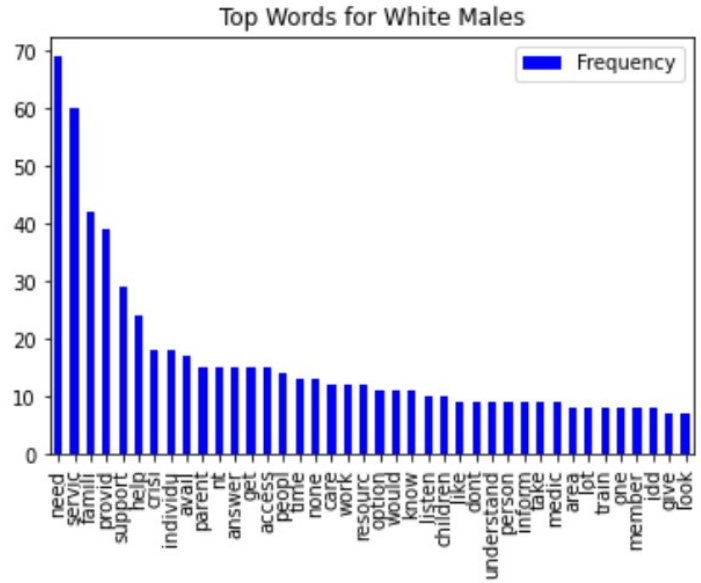
- Highest levels of in-patient crisis care among nonwhite female patients
- Families of male patients reported lower levels of "very satisfied" than families of female patients within given racial demographics
- Families of nonwhite patients reported lower levels of "very satisfied" than families of white patients across gender
  - This trend is much more pronounced than gender discrepancies
  - Patients and families would be more likely to experience similar racial discrimination
    - Contrasted with a reporter being a different gender than the patient
- We don't know the actual levels of satisfaction from patients themselves!

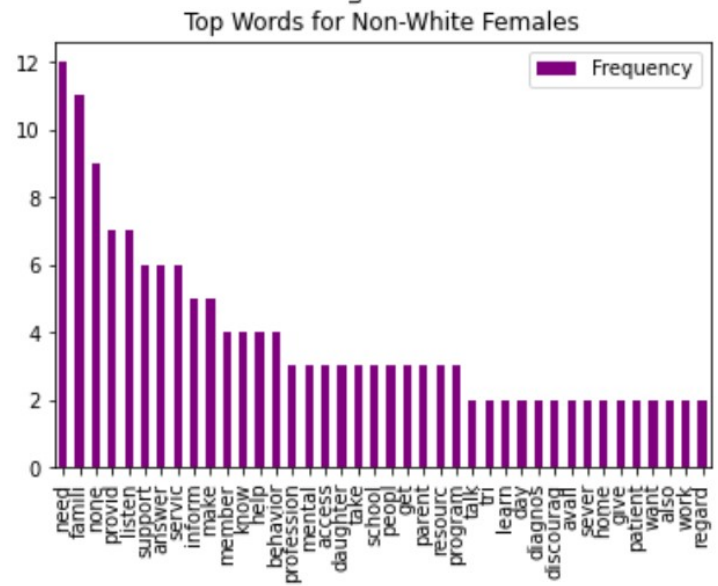
Part 2 Results: fig 3

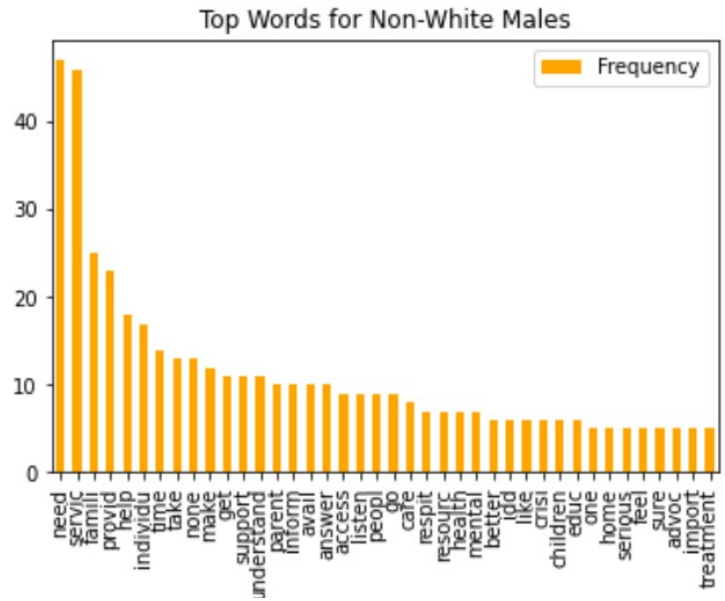


Part 2 Results: fig 4-6









Discussion: Part 2

- Nonwhite females have 'help' for 13th as compared to other datasets in 5th/6th
- Nonwhite females have 'none' at 3rd - higher than other subsets
- Nonwhite females have 'listen' in 5th while other subsets feature 'listen' in around 20th (or not at all for white females)
- White females do not have 'access' in their top 40 while other subsets have 'access' in 14th, 17th, and 18th
- White males do not have 'mental' in their topwords at all
- Males have 'individu' in their top 40 but females do not
- Patient needs versus family perceptions

Limitations

- Limited dataset especially after merging and subsetting based on demographic information.
- Disparities in sample size for each demographic group after subsetting
- FEIS data is provided by family, not patients themselves, so they may be biased/inaccurate.
- Decided not to subset based on location due to limited data, so does not account for geographic differences

Next steps

Further Explorations for Project:

- More accurately analyzing the topics in question to filter out generic words and see if we can achieve a greater divide
- Potentially examining other questions on the FEIS survey to examine other aspects of

Further Explorations Overall:

- Acquire data from patients' perspective
- Acquire more data overall to better account for disparities in sample size