COVID-19: Pandemic's Impact On Mental Health
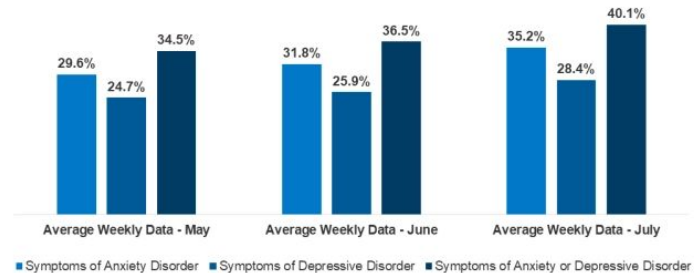
Aftab Alam, Anusha Dhar, Sahana Bhat

Information School
UNIVERSITY of WASHINGTON

W

The Problem

- The COVID-19 pandemic impacts on the lives of the people
- Lockdown and social distancing
- Not enough attention to mental health issues

Figure 1

Average Share of Adults Reporting Symptoms of Anxiety or Depressive Disorder During the COVID-19 Pandemic, May-July 2020

	Average Weekly Data - May			Average Weekly Data - June			Average Weekly Data - July		
	29.6%	24.7%	34.5%	31.8%	25.9%	36.5%	35.2%	28.4%	40.1%

■ Symptoms of Anxiety Disorder ■ Symptoms of Depressive Disorder ■ Symptoms of Anxiety or Depressive Disorder

NOTES: These adults, ages 18+, have symptoms of anxiety or depressive disorder that generally occur more than half the days or nearly every day. Data presented for "symptoms of anxiety or depressive disorder" also includes adults with symptoms of both anxiety and depressive disorder. Data presented for May is the average of the following weeks of data: May 7-12, May 14-19, May 21-26, May 28- June 2; for June, data is the average of June 4-9, June 11-16, June 18-23, and June 25-30; for July, data is the average of July 2-7, July 9-14, and July 16-21 (last week of published data).
SOURCE: U.S. Census Bureau, Household Pulse Survey, 2020.

KFF
HENRY J KAISER
FAMILY FOUNDATION

Project Overview

- Is there a correlation between events such as **strict lockdown** and mental health discussion in online communities?
- How does mental health related **conversation** changed from pre covid-19?
- Do Reddit and Twitter user discuss **mental health** issues same way?
- How does **vaccine** availability affects mental health?

Social Media Data Analysis is Hard

Mental Health is still a Social Taboo
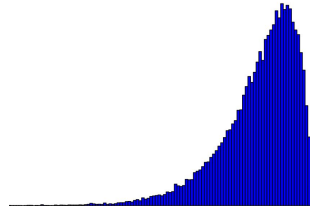
Skewed data that does not reflect the COVID events

Bias in data

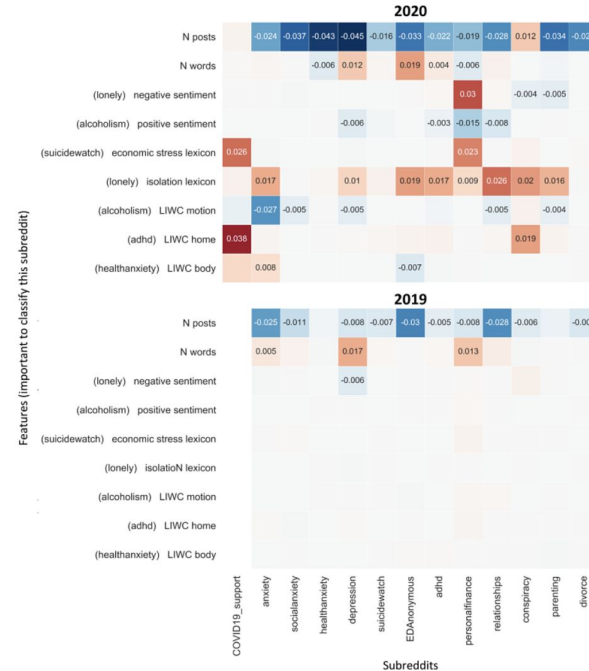Wrong association of symptoms to a disease

Prior Research and Its Limitation

- Mental health and non–mental health groups
- Identifies vulnerable groups
- Change in language during the pandemic

Limits of current practice

- No formalised clinical diagnosis
- Limited to Reddit data
- Does not account for changes in conversation due to major events

Subreddit	Negative semantic change
personalfinance	0.139
relationships	0.042
fitness	0.029
COVID19_support	0.026
jokes	0.024
adhd	**0.023**
EDAnonymous	**0.019**
mentalhealth	0.018
anxiety	**0.017**
depression	0.014
parenting	0.01
legaladvice	0.007
bpd	0.006
addiction	0.005
alcoholism	0.004
guns	0.004
meditation	0.003
socialanxiety	0
healthanxiety	0
autism	0
bipolarreddit	0
lonely	0
suicidewatch	0
divorce	0
teaching	0
schizophrenia	0
ptsd	-0.005
conspiracy	-0.011

Our Approach

2020
Most Tweeted about hashtags in APAC

#covid19
#lockdown
#mentalhealth
#stayhome
#climatechange

#ThisHappened

- Analyse change in conversation over time
- Inclusion of Twitter and potentially survey data
- Inclusion of events such as vaccine distribution
- Inclusion of geographic location

Who Could Benefit

- Government agency
- NGOs
- Mental health professionals
- People with mental health issues

Impact and Pay-off

Our project findings will help us to,

- Confirm that social media data can be used for **future research** in mental health
- Understand discussion **trends** to confirm events along the COVID timeline
- Identify the **key features and determinants** of mental health illness to train text classifiers and build a tool to track **population's mental health**.
- The government can use social media to understand the sentiments from responses for similar events in the future and **stay prepared**
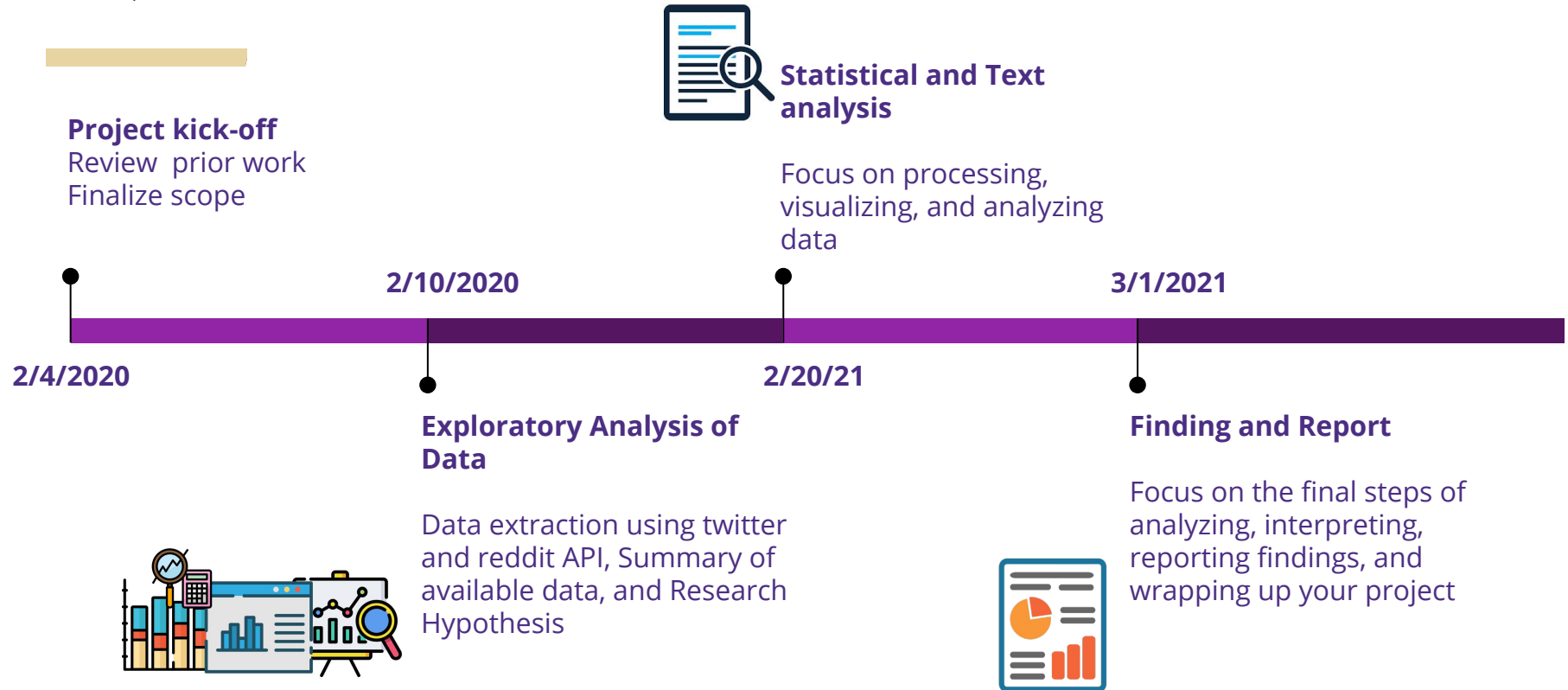
Dataset

We will collect data from Twitter and Reddit based on selected COVID events.

- **Tweets** will be filtered based on keywords related to covid and medical terms of mental illness.
- We have identified **subReddits** and discussions in Reddit
- Survey results will be used to verify and confirm our analysis findings

The raw data obtained from both the sources will be normalized to a standard data frame, then cleaned by tokenizing, removing stop words, stemming.

Project Plan

Project kick-off
Review prior work
Finalize scope

Statistical and Text analysis

Focus on processing, visualizing, and analyzing data

2/10/2020

3/1/2021

2/4/2020

2/20/21

Exploratory Analysis of Data

Data extraction using twitter and reddit API, Summary of available data, and Research Hypothesis

Finding and Report

Focus on the final steps of analyzing, interpreting, reporting findings, and wrapping up your project

Reference Links

Related Research papers

- https://towardsdatascience.com/exploring-the-link-between-covid-19-and-depression-using-neural-networks-469030112d3d
- https://www.jmir.org/2020/10/e22635?utm_source=ground.news&utm_medium=referral
- https://arxiv.org/abs/2007.00228

Subreddits - R/anxiety, r/ocd, r/mentalhealth, r/mentalillness, r/Lockdownsupport

More subreddits - https://www.reddit.com/r/ListOfSubreddits/comments/dmic6o/advice_mental_health_subreddits/

Reddit discussions -

https://www.reddit.com/r/COVID19_support/comments/g6g3pj/has_anyones_mental_health_been_complete_shit/

https://www.nature.com/articles/s41598-017-12961-9

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6043409/

Mental health Keyword lists to filter Tweets -
https://www.uttyler.edu/careersuccess/files/mental-health-assistant-specialized-keywords.pdf
https://www.bestselfwny.org/resources/glossary-of-mental-health-terms/

Thank you