

The background features a complex network of thin grey lines connecting various points, forming a web-like structure. Scattered throughout are numerous triangles of different sizes and orientations, some solid and some outlined. The overall aesthetic is minimalist and geometric.

Understanding r/Depression and r/SuicideWatch

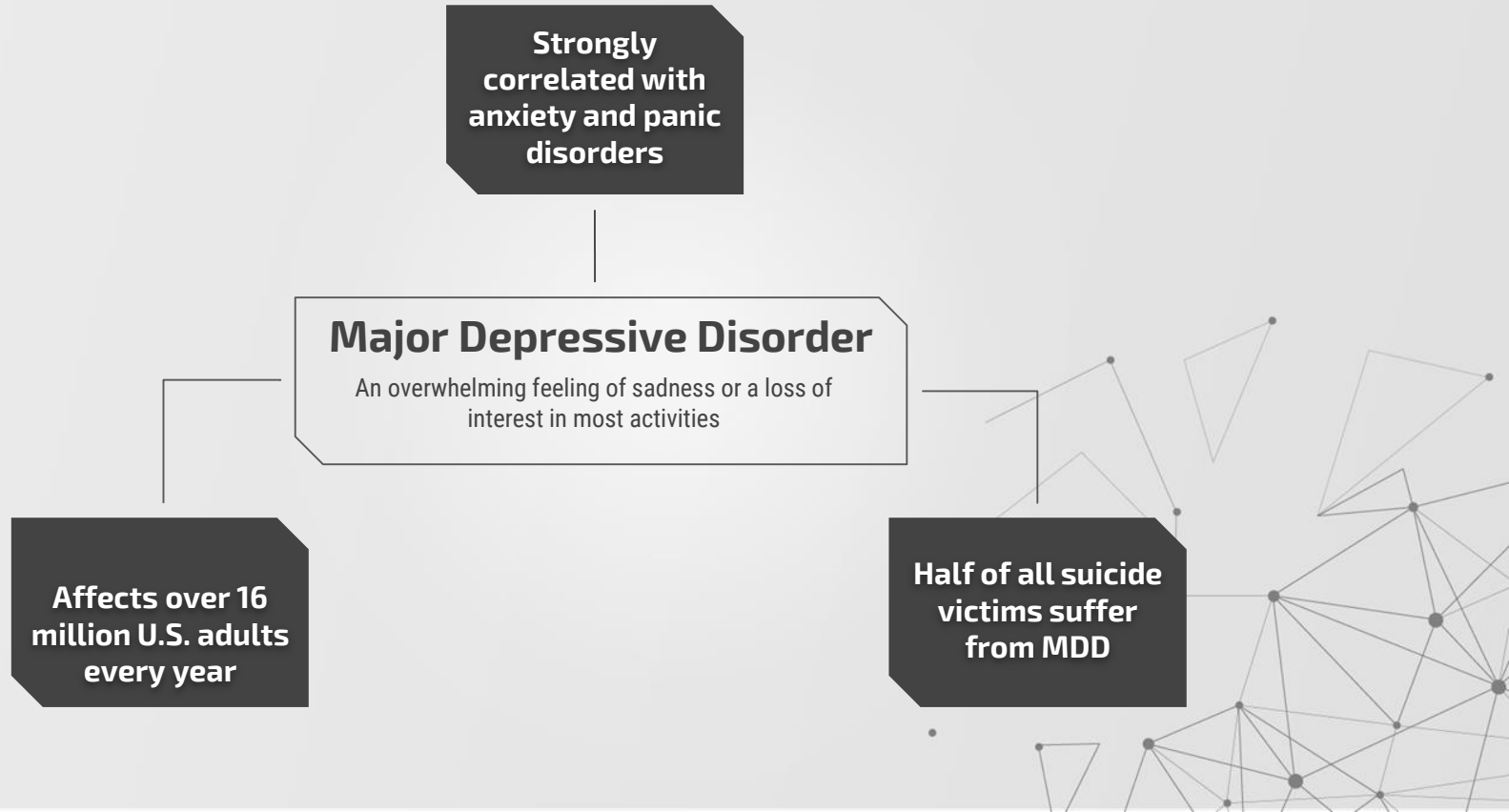
Are these communities viable support
resources for at-risk individuals?



01

Depression and Suicide

A Leading Cause of Disability in U.S. Adults



How Suicide Impacts Us

1.3%

Of U.S. deaths are suicide-related

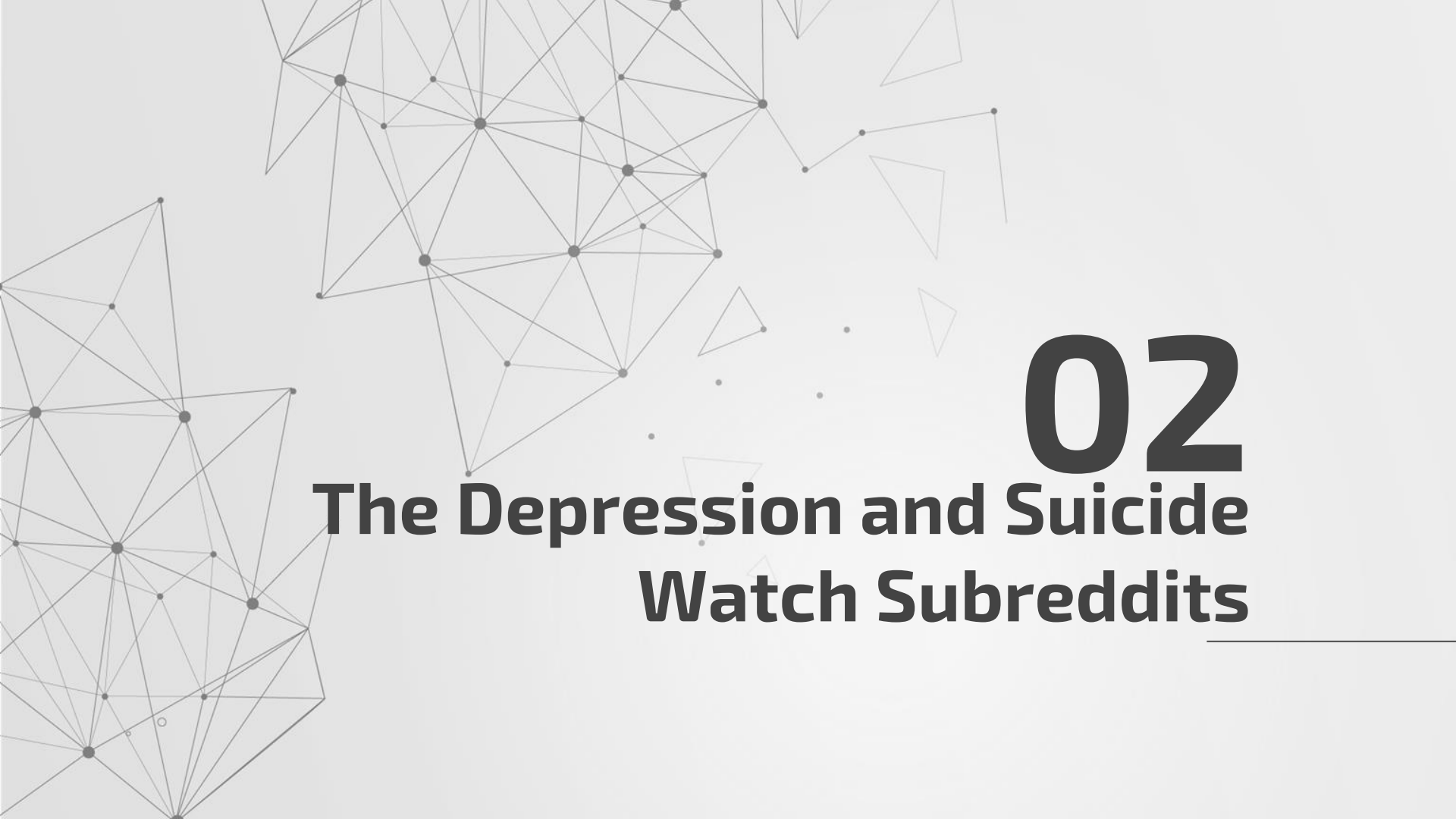
2nd

Leading cause of death, ages 15 - 34

123

Suicides per day





02

The Depression and Suicide Watch Subreddits



The r/Depression Subreddit

"Peer support for anyone struggling with depression, the mental illness"

"We are not a crisis service. We can't guarantee an immediate response."

"It's usually more helpful to post anything that specifically involves suicidal intent in r/SuicideWatch"

579,000 members

Created Jan 1, 2009

Text posts only

No diagnoses allowed

Nothing explicit about self-harm

Support, rather than advice



The r/SuicideWatch Subreddit

"This is a place of support"

"If you're here to help, please respond publicly to our OPs in need"

Talking Tips and Risk Assessment guides provided for community

172,000 members

Created Dec 16, 2008

Direct, personal, supportive

No diagnoses allowed

Non-judgmental comments only

No pro-suicide posts allowed

03

Goals, Methodology, and Data



Goals and Objectives:

Quantify the environments of these communities



Sentiment

How supportive are commenters towards posters?



Word Usage

Do posters and commenters employ particular strategies when engaging in the r/Depression and r/SuicideWatch communities?

Goals and Objectives:

Identify fundamental differences between the subreddits



Thread Metadata

In what ways do r/Depression Threads differ from r/SuicideWatch Threads?



Classification

Can we distinguish posts involving depression from posts involving suicide?

Dataset Overview

r/Depression	r/SuicideWatch
934 threads	980 threads
4,035 comments	4,447 comments



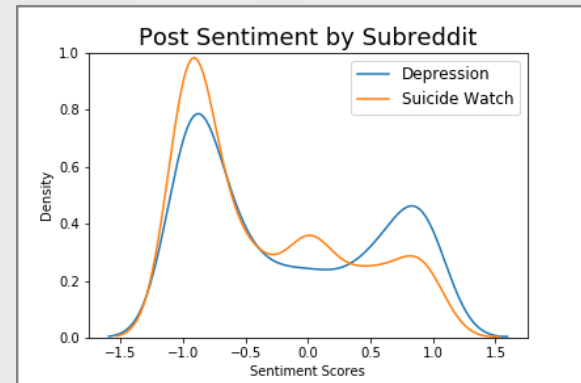
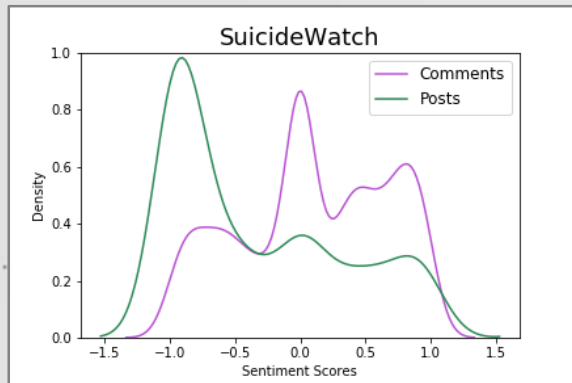
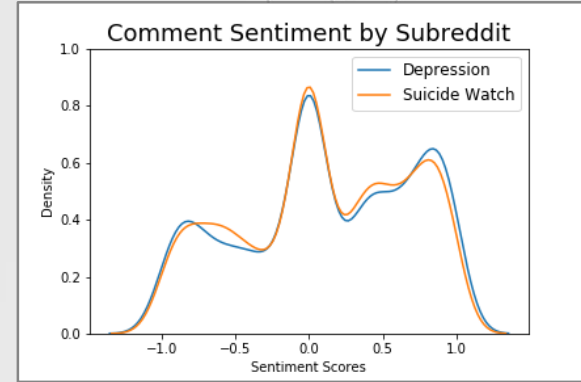
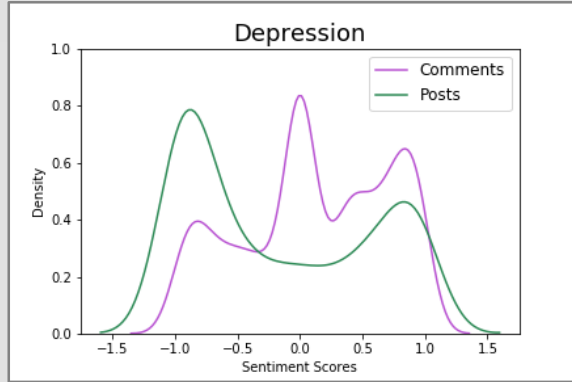
Threads and
comments pulled
from Reddit using
PRAW



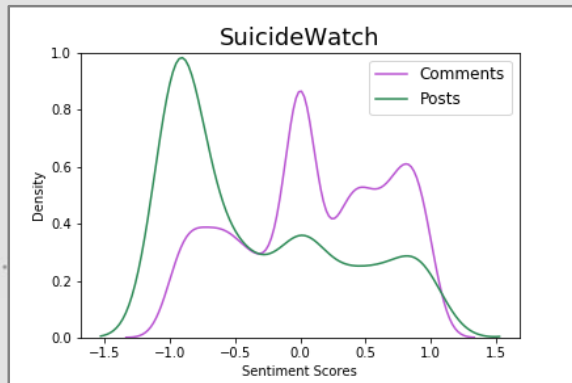
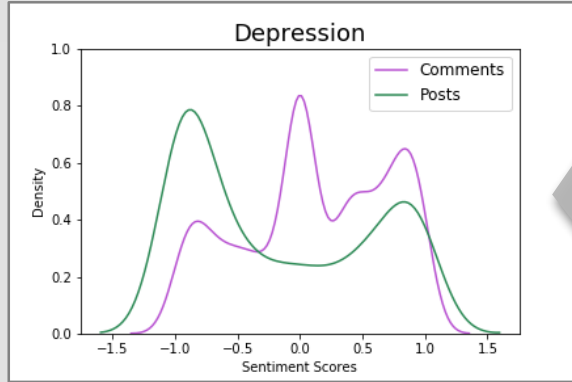
04

Quantifying the Subreddits

Sentiment Analysis



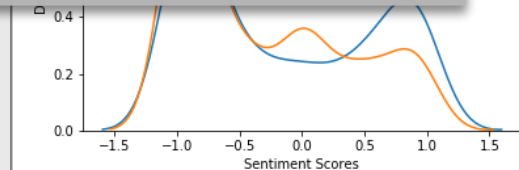
Sentiment Analysis



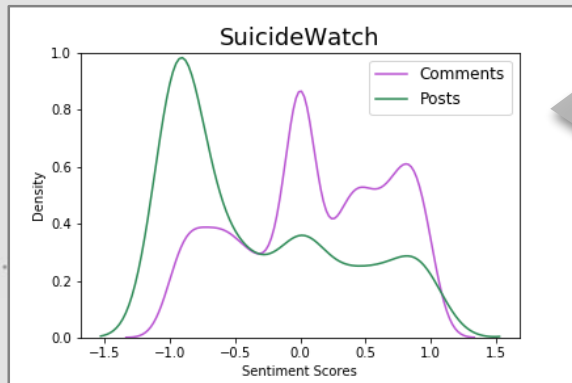
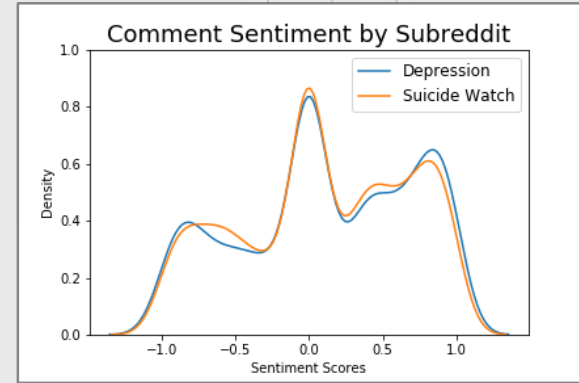
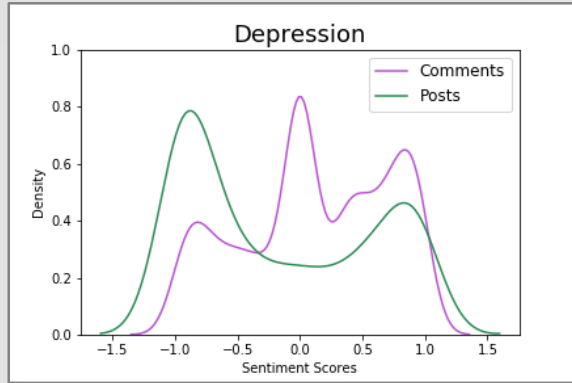
r/Depression posts are usually either very negative or very positive, though most posts are negative.

The comments are much more positive than the posts, which indicates that commenters tend to foster more positive environments.

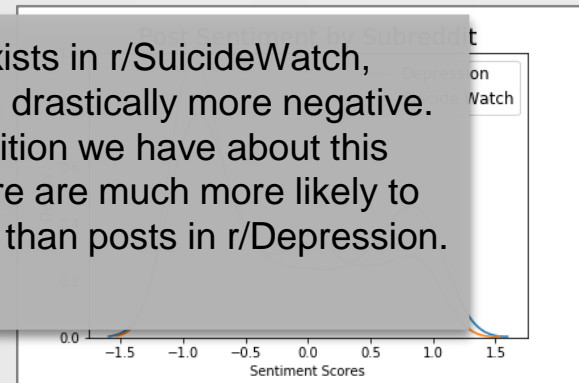
Additionally, some comments are very negative. This is not necessarily a bad thing; many of these negative comments could be validating the original poster's feelings.



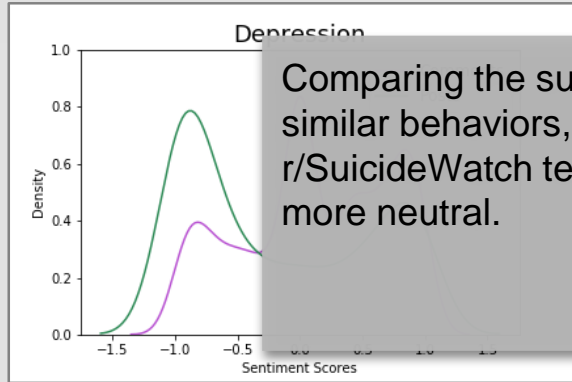
Sentiment Analysis



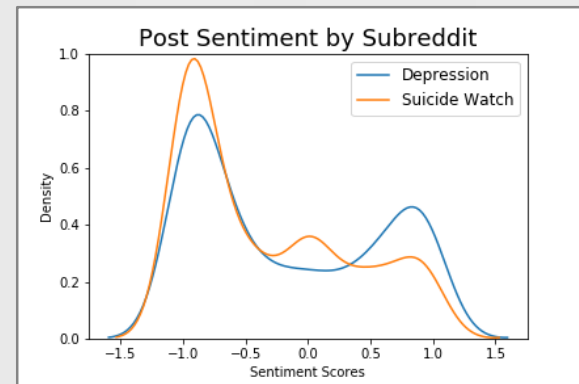
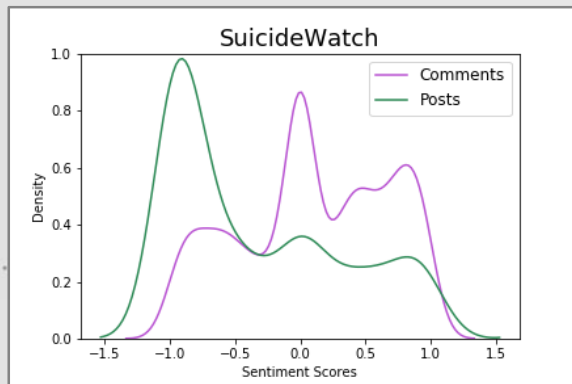
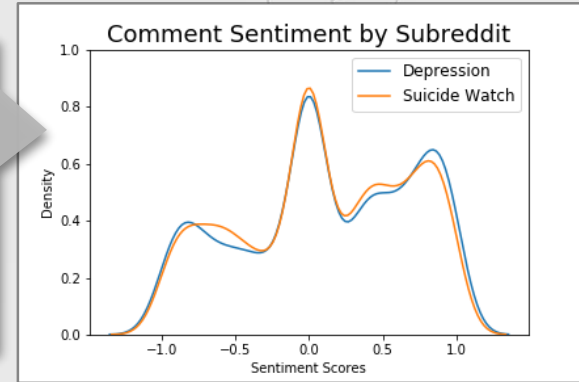
A similar dynamic exists in r/SuicideWatch, though the posts are drastically more negative. This fits with the intuition we have about this subreddit. Posts here are much more likely to be strongly negative than posts in r/Depression.



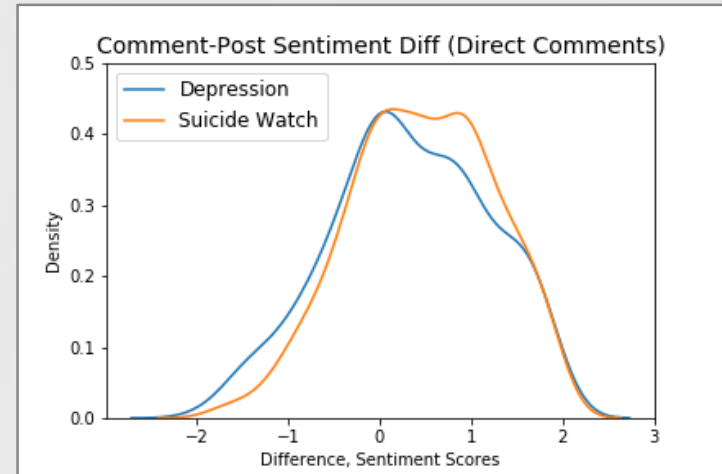
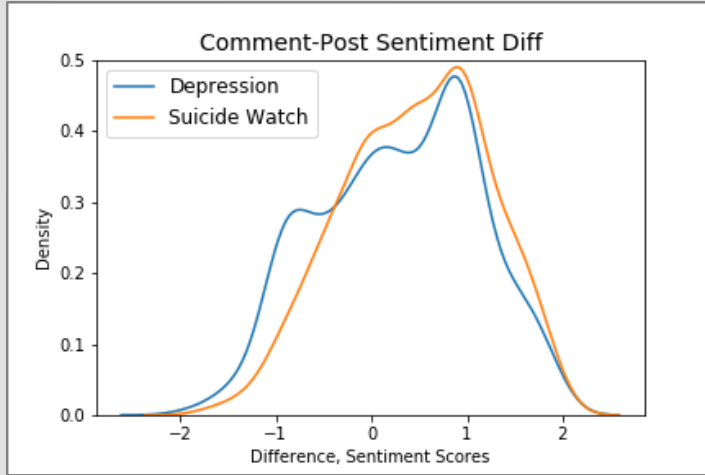
Sentiment Analysis



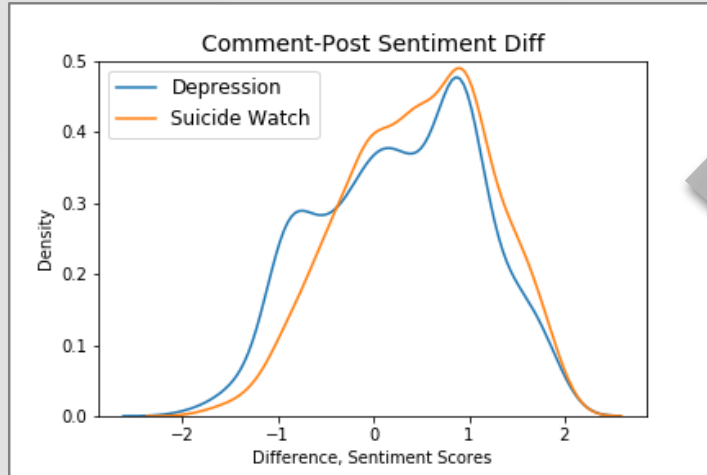
Comparing the subreddits, we see very similar behaviors, though comments in r/SuicideWatch tend to be somewhat more neutral.



Sentiment Analysis – Posters and Commenters

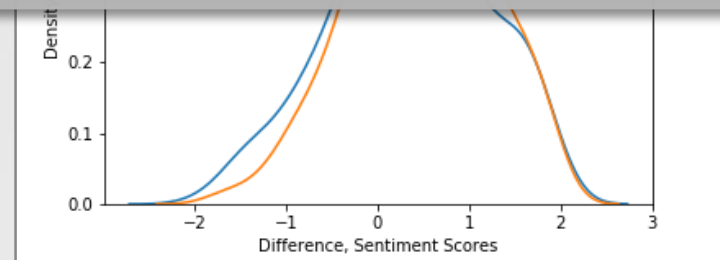


Sentiment Analysis – Posters and Commenters

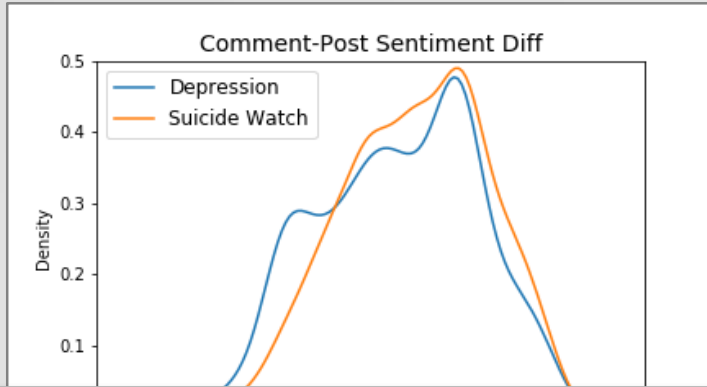


This density plot shows the distribution of the difference between the median comment sentiment and the post sentiment. (A positive value means the median comment sentiment was more positive than the post.)

In general, in both subreddits, the average comment has a higher sentiment score than the post that comment responded to.

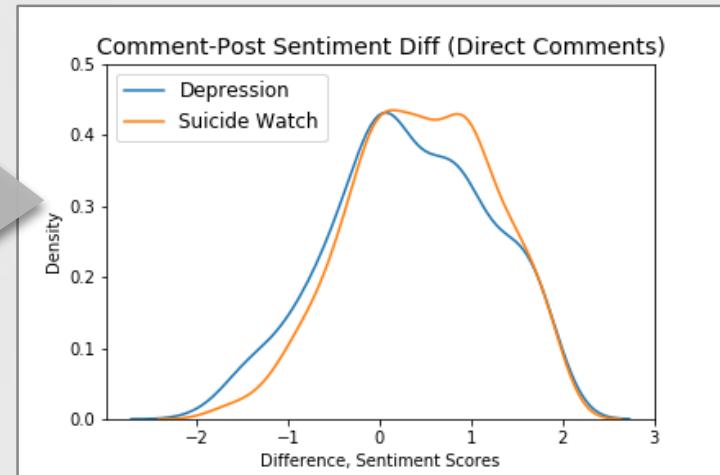


Sentiment Analysis – Posters and Commenters

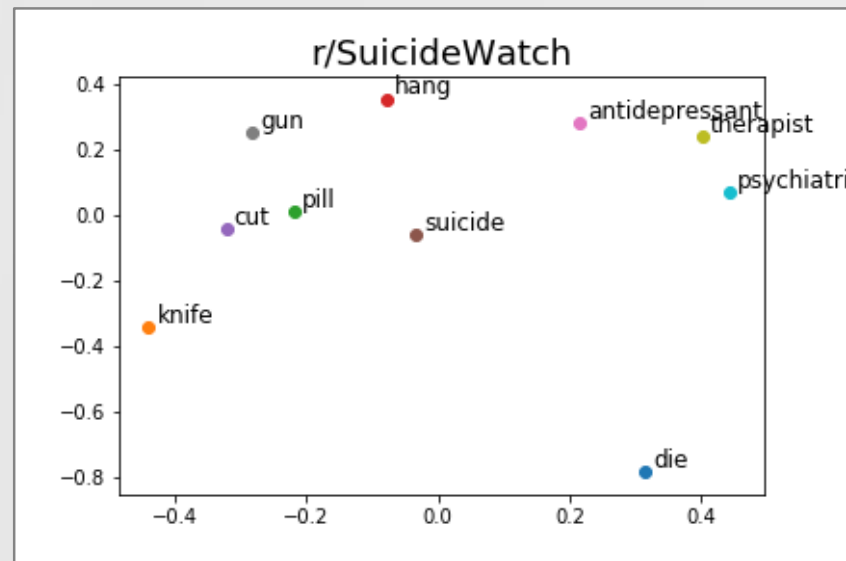
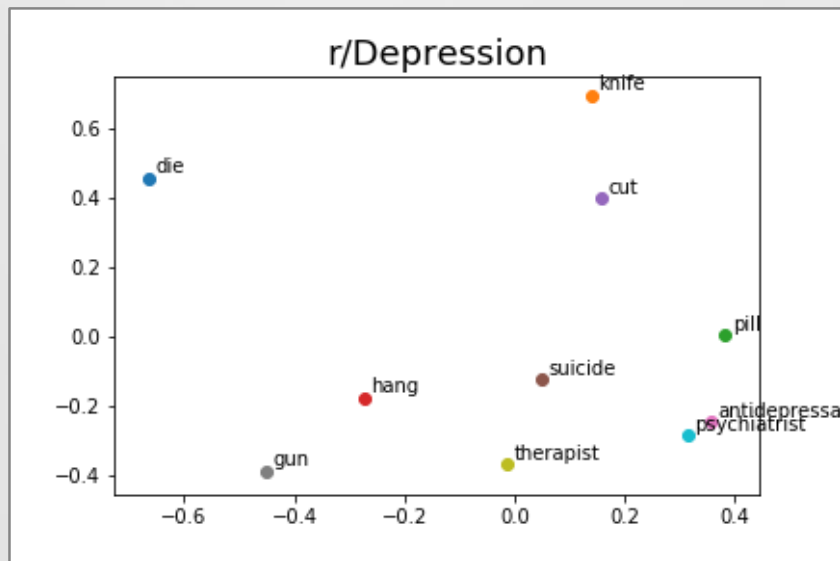


This plot excludes comments that were not direct responses to the original post.

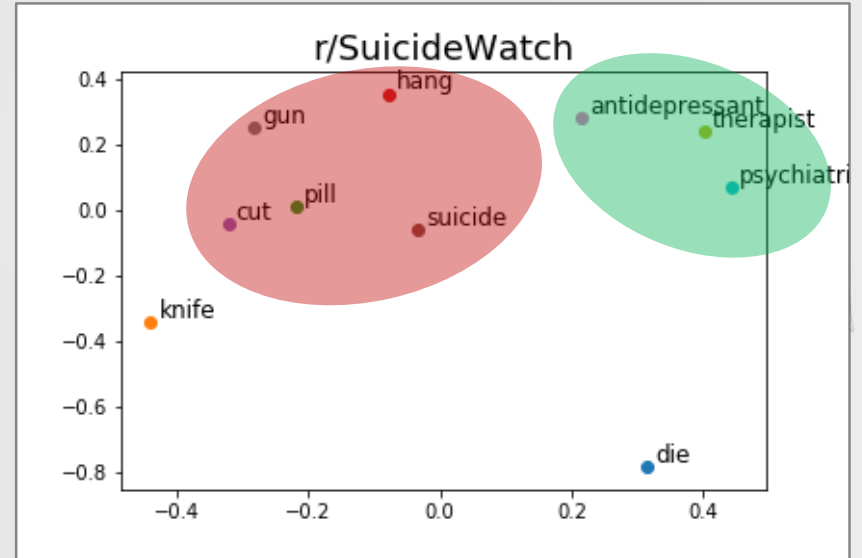
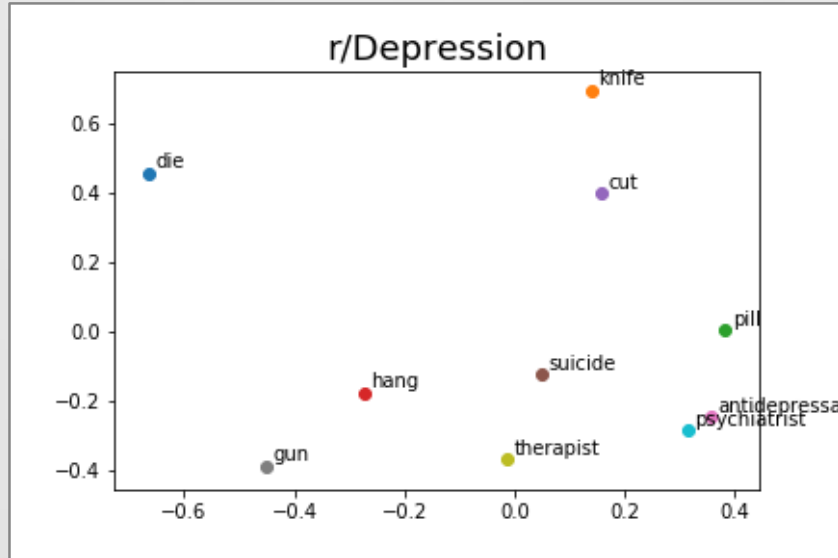
There is a greater difference in sentiments in this plot than in the plot on the left, which means that direct responders are much more likely to respond in very positive and constructive ways.



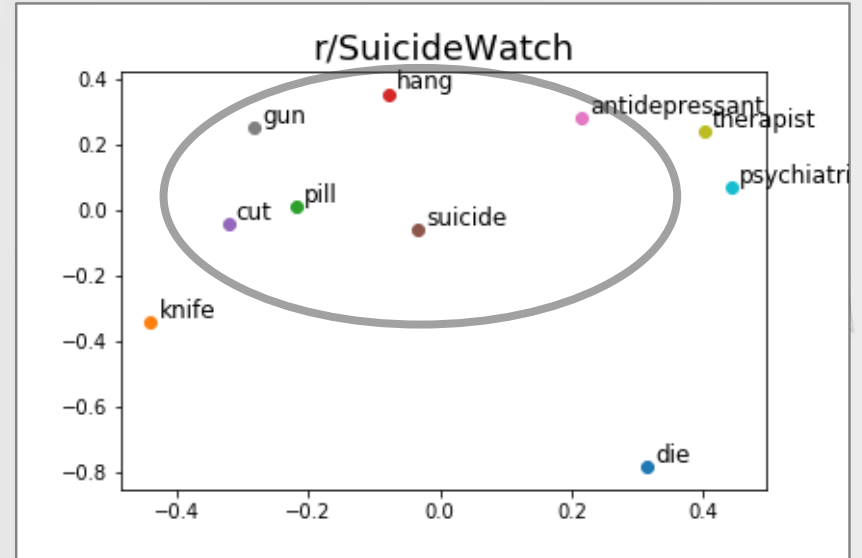
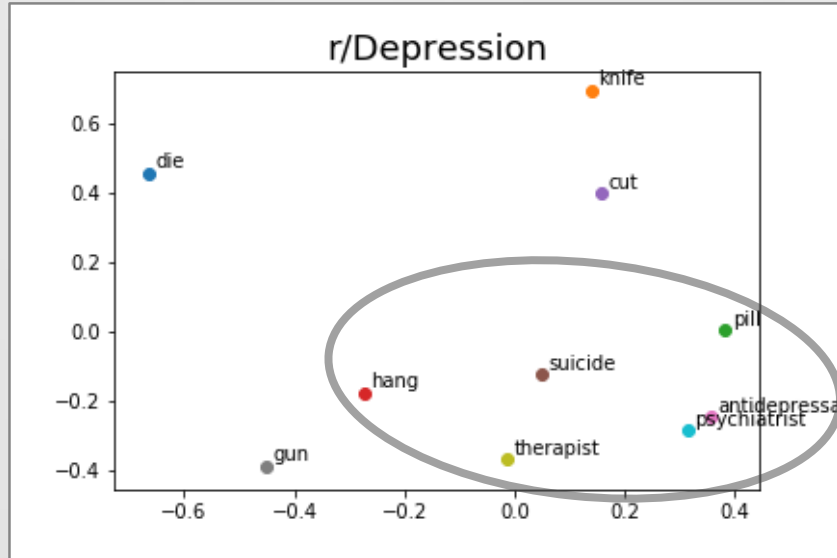
Identifying Commenting Strategies



Identifying Commenting Strategies



Identifying Commenting Strategies



05

Classifying Threads



Classifying Threads

Logistic Regression

Accuracy: 70.1%

False Pos Rate: 33%

False Neg Rate: 23%

Gradient Boosting

Accuracy: 64%

False Pos Rate: 29%

False Neg Rate: 52%

Feature Importance

Median Direct Reply Time

Min Reply Time

Post Sentiment Score

Median Comment Length

Frequency of Suicide-related Words

Frequency of Goal-oriented Words



06

Conclusions

What we can conclude about these subreddits

1. There is evidence that commenters generally create more positive environments for communities
2. Commenters on r/SuicideWatch tend to either discuss medical intervention solutions or express their urges regarding suicide
3. There is evidence that a distinguishing factor between r/Depression and r/SuicideWatch commenters is ideation of suicide
4. Comment time and post sentiment scores are the distinguishing factors of these communities