Mental illness affects 1 in 4
Percent of US Adults with Any Mental Illness Who Received Mental Health Services in 2017

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>38.4%</td>
</tr>
<tr>
<td>26-49</td>
<td>43.3%</td>
</tr>
<tr>
<td>50+</td>
<td>44.2%</td>
</tr>
</tbody>
</table>

Data from https://www.nimh.nih.gov/health/statistics/mental-illness.shtml#part_155771
Peer Support

People provide knowledge, emotional support, and/or practical help to each other based on a shared experience of emotional or psychological pain.

Definition based on the one provided by Mead, Hilton, and Curtis in “Peer Support: A Theoretical Perspective” (2001)
What types of responses are the most helpful to individuals sharing their mental health struggles online?
Online Peer Support Platform
500,000
Users across the world

19 years old
Median age

<50
Admins and moderators
I think I need help...
y wuts up?
dont we all
dm me
probably lol
here 4 u
2.

Diving into the Data
Focusing on mental health

All dates

20 million

2018 only

2 million
What types of mental health problems do users seek out peer support for?

- Used natural language processing technique called “topic models” to identify a post’s theme
- Hand-labeled into 9 distinct categories
Example “Despair” Post:

Sometimes I get so lonely I can't help but feel sad and then I'm angry for being this way.
Example “Broad Encouragement”
Comment:

I know things are hard but I know you can get through this. I am rooting for you.
What types of comments are left on mental health posts?

- Identified 11 distinct categories of comments
- The most prominent support strategies are relating personal histories and offering words of encouragement
3. Methods
Our supervised learning model to understand characteristics of helpfulness

POST + COMMENT
POST + COMMENT
POST + COMMENT

LOGISTIC REGRESSION CLASSIFIER

Can this tell us something about helpful peer support?
# Measuring helpfulness, the ideal way

<table>
<thead>
<tr>
<th>Professionally annotated data</th>
<th>Surveys</th>
<th>Mental health assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better able to understand context-driven responses</td>
<td>“Was this comment helpful?”</td>
<td>When users first sign up, and periodically afterwards</td>
</tr>
</tbody>
</table>
Measuring helpfulness, by proxy

<table>
<thead>
<tr>
<th>Likes</th>
<th>Follows</th>
<th>Specific Gratitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poster “likes” a comment on their post</td>
<td>Poster “follows” a commenter</td>
<td>Poster thanks specific commenter</td>
</tr>
</tbody>
</table>

**General Gratitude**
Poster thanks group of commenters (i.e. “thank you all.”)

**Mood Change**
Poster posts again with improved mood category

**Any of These**
Poster likes, follows, thanks, or posts with a mood change
## Caveats for proxy measurements

<table>
<thead>
<tr>
<th>Likes</th>
<th>Follows</th>
<th>Specific Gratitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social media chatter</td>
<td>Infrequent</td>
<td>If &gt;1 comment by user, which one was it?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Gratitude</th>
<th>Mood Change</th>
<th>Any of These</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social norms</td>
<td>Positive mood ≠ positive content</td>
<td>If any one measure is flawed, then so is this</td>
</tr>
</tbody>
</table>

And if users only participate on platform for median 2 days...
Do proxies occur often?

<table>
<thead>
<tr>
<th>Measures</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likes</td>
<td>35%</td>
</tr>
<tr>
<td>Mood Improvement</td>
<td>18%</td>
</tr>
<tr>
<td>Gratitude</td>
<td>3%</td>
</tr>
<tr>
<td>Personalized Gratitude</td>
<td>7%</td>
</tr>
<tr>
<td>Follows</td>
<td>4%</td>
</tr>
<tr>
<td>Any Positive Outcomes</td>
<td>52%</td>
</tr>
</tbody>
</table>

Do they co-occur?

<table>
<thead>
<tr>
<th>Cronbach’s alpha</th>
<th>Internal consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9 ≤ a</td>
<td>Excellent</td>
</tr>
<tr>
<td>0.8 ≤ a ≤ 0.9</td>
<td>Good</td>
</tr>
<tr>
<td>0.7 ≤ a ≤ 0.8</td>
<td>Acceptable</td>
</tr>
<tr>
<td>0.6 ≤ a ≤ 0.7</td>
<td>Questionable</td>
</tr>
<tr>
<td>0.5 ≤ a ≤ 0.6</td>
<td>Poor</td>
</tr>
<tr>
<td>a &lt; 0.5</td>
<td>Unacceptable</td>
</tr>
<tr>
<td>a &lt; 0.23</td>
<td>Our proxies...</td>
</tr>
</tbody>
</table>
What types of comments could be helpful?

**Specific words**
Did a poster or commenter use a specific word or types of words?
Althoff et al (2016)

**Specific behaviors**
Clinically validated actions (what professionals do)
Tanana et al (2016)
Behavior of clinicians

Motivational Interviewing (OARS)

- **Open questions** – “How did that make you feel?”
- **Affirmations** – “You handled that really well.”
- **Reflective Listening** – “It sounds like…”
- **Summaries** – “Let me see if I understand…”
The distribution of behaviors on peer support platforms is very different from counseling.
Findings
As a reminder, “helpful” means:

- Likes
- Follows
- Specific gratitude
- General gratitude
- Mood change
- Any of the above

And “not helpful” means the absence of these indicators.
More likely to be helpful:

- Females
- Younger users
- Those with larger networks
Counseling Behaviors

Unhelpful

OPEN QUESTION

SIMPLE REFLECTION

AFFIRM

SUMMARY

Helpful
Affirmation, encouragement and being available are found to be helpful.
Longer comments tend to positively correlate with our helpfulness measures.

**Helpful:**
- Longer comments
- Use of second person pronouns
- Use of emojis

**Not Helpful:**
- Use of first person pronouns
- Anxious language use
How did we do?

- 58-62% Our Accuracy
- 0.61 Our F1 Score
- 50% Chance Accuracy

What does that mean?

- There’s a lot of complexity involved
- These are proxies, not helpfulness
Takeaways
We need better ways to measure helpfulness

- Platform design
- Surveys
- Mental health assessments
We need better (and more) moderation
Peer support isn’t suitable for all mental health problems

Building community, feeling heard, being encouraged

Struggling through a deeper challenge

J. Repper and T. Carter “A review of the literature on peer support in mental health services” (2011)
Need better ways to deal with suicidal/extreme content
First do no harm.
Then try to help.