PRO-EATING DISORDER SOCIAL INTERACTION ON TWITTER

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Introduction
You starve. The numbers on your scale drop. But that girl in the mirror gets bigger. The voice in your head gets louder. #EDLife

Eating Disorders (EDs):
- EDs such as Anorexia and Bulimia are characterized by a desire to lose weight, often including deleterious methods such as severe caloric restriction or purging. Complications include osteoporosis, arrhythmia and death.

Pro-Eating Disorder Movements:
- These include pro-Ana and pro-Mia, decentralized online movements which aim to support those with eating disorders to attain and maintain emaciation.

Eating Disorder Identity:
- EDs become part of patients’ identity.
- Stigma against EDs discourages patients from displaying this identity in everyday social interaction.
- ED patients tend to have impoverished in-person social networks.

Twitter:
- A popular and novel social media site on which to investigate pro-ED activity.
- Accounts are publicly accessible and may be anonymous.
- Users hold at least one profile (Handle), may Tweet (micro-expressions of 140 characters or less).
- Users can Follow other Handles (subscribe to Tweets of another Handle), and similarly gain an audience of Followers. Handle’s select lists, which are formed unidirectionally.

Theory of Homophily suggests that social ties are formed based on similar characteristics.

Hypothesis
The social structure of Twitter may allow pro-ED Twitter Handles to express their ED identity and gain social capital in the form of an audience of Followers.

Because ties are formed based on homophily and ED displays are stigmatizing, Followers are expected to share an interest in weight loss.

Methods
Sampling of Egos:
- 45 pro-ED Handles, subsequently called Egos, were identified for Tweeting #ProAna and fulfillment of inclusion criteria. These criteria restricted the sample to those with current pro-ED attitudes, and eliminated verified, protected, and inactive Handles.

Sampling of Egos’ Followers:
- For each Ego, a simple random sample of 100 (or all available if fewer than 100) Followers was collected.

Data Collection Tools:
- Data was collected using the Twitter Application Programming Interface and the R package twitteR.

Qualitative Coding of Egos’ Tweets for ED References:
- For each Ego, all original Tweets (excluding re-Tweets) were coded using R for references to EDs, according to a Codebook
- Each Tweet was given a dummy variable (0/1) to indicate the presence of an ED Reference if it included at least one keyword.

Qualitative Coding of Followers for ED References:
- Each sampled Follower, ED References were hand coded using a list of keywords and synonyms. This list was more restrictive than that used for Egos. Sampled Followers’ Handles, Screen Names, Descriptions, and Locations were coded.

Each Follower was given a dummy variable (0/1) to indicate the presence of an ED reference if it included at least one keyword or synonym.

Results
- 87% (N=39) of Egos displayed ED References in their basic profile information.

<table>
<thead>
<tr>
<th></th>
<th>ED Tweets</th>
<th>Total Tweets</th>
<th>ED Followers</th>
<th>Total Followers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>36%</td>
<td>49</td>
<td>44.4%</td>
<td>173</td>
</tr>
<tr>
<td>Range</td>
<td>0.78%</td>
<td>6-1105</td>
<td>0.79%</td>
<td>5-7935</td>
</tr>
</tbody>
</table>

Added Variable Plot of % ED Followers vs % ED Tweets

Discussion
- High proportion of ED Tweets indicates that pro-ED Twitter accounts are indeed a venue for expression of the ED identity.
- High proportion of ED Followers suggests that pro-ED Handles make social connections on Twitter with other Handles also explicitly interested in weight control.
- While ED social expression and connection on Twitter could be a source of social support for pro-ED Twitter Handles and their Followers, it also has the potential to reinforce deleterious attitudes, intentions and behaviors.

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