

Assessing Information Quality and User Engagement of Eating Disorder Content on TikTok

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Background

Spreading misleading and harmful information on digital platforms is a risk for global society





- Big technology companies (e.g., Twitter and Meta) have tried to combat online malicious behavior and content
 - However, they have been unsuccessful because it is a sociotechnical challenge, not a purely technical challenge

Significance

- TikTok is one of the most popular social media platforms in the U.S. among adolescents (Vogels et al., 2022)
- Adolescents leverage TikTok to discuss and offer advice on health-related topics, including eating disorders
 - Complex, psychophysiological illnesses with the highest mortality rate of any psychiatric disorder (Arcelus et al., 2021)





TikTok can facilitate health communication OR
spread misleading information?

Objectives

- To identify themes present in eating disorder content on TikTok
- To identify the accuracy of information in eating disorder content on TikTok
- To explore the relationships between determinant factors of user engagement (i.e., views, like, comments, and shares) and creator characteristics (i.e., number of followers and total likes), content themes, and accuracy of information

Methods

Data Collection

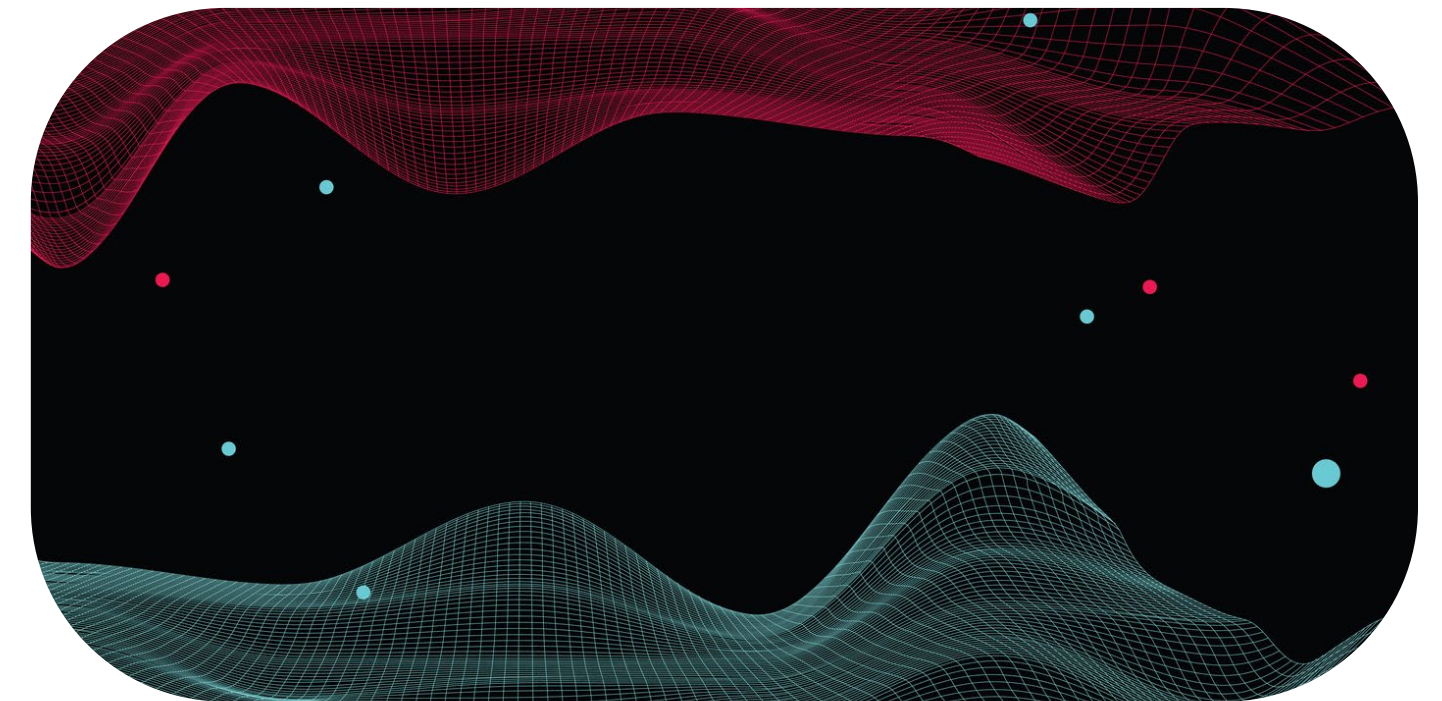
- Identified 10 popular hashtags representing pro-eating disorder and pro-recovery communities on TikTok (Herrick et al., 2021; Paul, 2021)
- Using stratified sampling, downloaded 20 videos from each hashtag
- Sample size: 200 videos
 - Transcribed auditory, visual, and textual components and captions
 - Collected user engagement metrics (likes, views, shares, and comments) and creator characteristics (total number of followers and total number of likes on all content)



Methods

Data Analysis

- Thematic analysis to code content themes (Braun & Clarke, 2006)
 - Coded three primary units of analysis: visual, audio, and text
 - Open, focused, and axial coding
- Categorized videos into three domains: pro-eating disorder, anti-eating disorder, or pro-recovery (Branley & Covey, 2017)
- Evaluated accuracy of information as informative, misleading, or other (Syed-Abdul et al., 2013)
- Measured differences in accuracy of information and user engagement among the three domains using Pearson's Chi-square test, ANOVA, linear regression, and random permutation tests



Results

Content Themes

- Thematic analysis resulted in 23 subthemes clustered into four high-level themes
- TikTok affords users a platform to share experiences and foster a greater sense of community

Encouraging the development or sustainment of eating disorders

- Promotes eating disorders as a lifestyle or actively encourages TikTok users to develop or sustain an eating disorder

Sharing physical or emotional experiences with eating disorders

- Experiential knowledge shared on TikTok to raise awareness of or educate other users about eating disorders

Sharing narratives of recovery

- Personal experiences with recovering from an eating disorder

Social support

- Users provide or seek social support or share their experiences with receiving social support for their eating disorder both offline and online

Results

Information Accuracy

- Pro-recovery domain contained more informative content
 - Suggests members are engaging in community defensive information practices (Kitzie et al., 2022; Gibson & Martin, 2019)
 - Strong sense of community can serve as an effective strategy for building collective resilience against misleading information (Lee et al., 2022)

			Accuracy of information			
			Informative	Misleading	Other	Total
Categorization	Pro-ED	Observed	0	47	12	59
		Expected	24.0	13.9	21.1	59.0
	Anti-ED	Observed	5	0	11	16
		Expected	6.5	3.8	5.7	16.0
	Pro-Recovery	Observed	76	1	48	125
		Expected	50.5	29.3	44.2	124.0
Total		Observed	81	72	47	200
		Expected	81.0	72.0	47.0	200.0

Comparison of Accuracy of Information between Pro–Eating Disorder,
Anti–Eating Disorder, and Pro-Recovery Content on TikTok

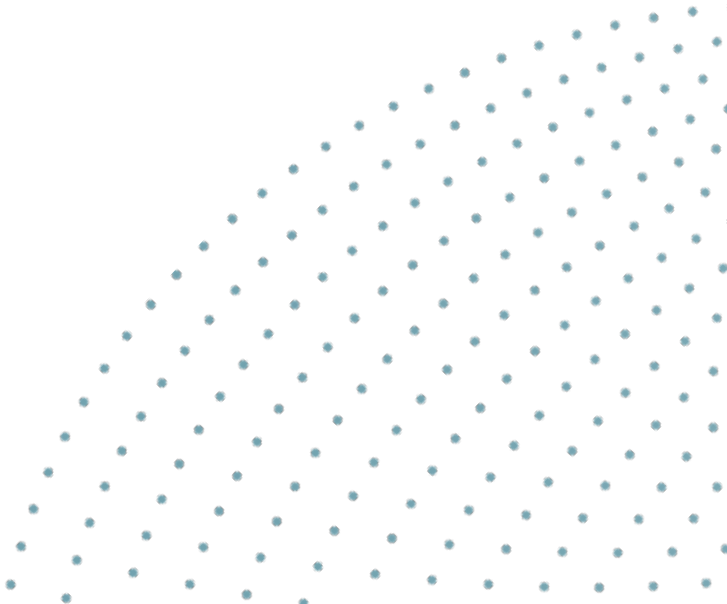
Results

User Engagement by Accuracy and Domain

- No significant difference in user engagement between pro-eating disorder, anti-eating disorder, and pro-recovery domains
- No significant difference in user engagement between informative and misleading content
- Differences may be attributed to unique platform features of TikTok:
 - Shorter length of videos
 - Tendency of videos to be geared more toward entertainment and shared experiences

	Repeats number	2-order distance <i>p</i> -value	1-order distance <i>p</i> -value
Likes	10,000	0.59	0.61
Comments	10,000	0.47	0.45
Views	10,000	0.43	0.48
Shares	10,000	0.54	0.57

Comparison of User Engagement with Pro– Eating Disorder, Anti– Eating Disorder, and Pro-Recovery Content on TikTok



Results

User Engagement and Creator Characteristics

- Significant association between creator characteristics (i.e., number of followers and total likes) and user engagement
 - Accounts with a greater follower base on TikTok receive higher engagement with content
- No significant difference between creator characteristics and user engagement among pro-eating disorder, anti-eating disorder, and pro-recovery content
 - May be attributed to recent modifications to TikTok's algorithm to recognize and break up patterns of content with the same negative themes (Lin, 2021)

Likes Model						
	Residual df	RSS	df	S	F	p-value
Full Model	198	840.61	2	1.41	0.110	0.95
Selected Model	195	839.20	3			
Comments Model						
	Residual df	RSS	df	S	F	p-value
Full Model	197	934.91	2	19.08	2.031	0.13
Selected Model	195	915.84				
Views Model						
	Residual df	RSS	df	S	F	p-value
Full Model	195	961.67	2	5.29	0.534	0.59
Selected Model	193	956.38				
Shares Model						
	Residual df	RSS	df	S	F	p-value
Full Model	196	1243.5	2	8.80	0.691	0.50
Selected Model	194	1234.7				

Comparison of the Association of Creator Characteristics and User Engagement between Pro-Eating Disorder, Anti-Eating Disorder, and Pro-Recovery Content on TikTok

Limitations and Future Directions

- Limited to searchable content tagged with one of 10 hashtags
- One-month data collection period
- Potential for incorrect identification of creators' identities
- Future studies should analyze video comments
 - Deeper analysis might compliment or complicate findings on user engagement



Implications and Conclusions

- Study suggests that TikTok users are:
 - More invested in creating content focused on promoting eating disorder recovery
 - Engaging less with misinformation than on other social media platforms (Madathil et al., 2015; Tam et al., 2022)
- A combination of active, positive online communities and platform characteristics can pave the way to combat the spread of health misinformation
- Shift in how health professionals think about communicating health information to young populations
 - Community driven initiatives and digital media fairness may be effective strategies for collective action to combat unhealthy aspects of social media, especially for high-risk health issues

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Thank you!

Do you have any questions?

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