

Dissemination of Mask Effectiveness Misinformation Using TikTok as a Medium



To the Editors:

Juxtaposing the immense popularity of TikTok as a social media platform with its ability to propagate videos instantaneously, exposure to misleading information becomes an urgent domain of investigation. Although spreading misinformation may not be the intent of a social media app like TikTok, it is often an unintentional consequence of such an open access platform. Adolescent users of TikTok, who make up more than 60% of the active user base, are at substantial risk of misinformation [1]. As of July 20, 2020, three hashtags related to COVID-19 had reached almost 131 billion views collectively [2]. TikTok's global influence, especially among adolescents, has the potential to yield both profound benefits and significant detriments. The field of adolescent health has the ability to use TikTok in a way that promotes positive behavior change related to the COVID-19 pandemic [3].

Face coverings attenuate the transmission of SARS-CoV-2 viral particles [4]. While N95 respirators are especially effective, even surgical masks and reusable 12-16-layer cotton masks display strong trends toward efficacy [5]. Despite the massive amount of data substantiating the effectiveness of masks, dissemination of mask misinformation remains a problem on TikTok.

To explore the dissemination of potentially misleading information, we first examined videos marked with the hashtags "Mask," and "Masks," along with the comments under each video. As of December 18, 2020, these hashtags had reached 6.1 billion and 714 million views, respectively. Table 1 displays the data analysis for the 150 most viewed videos under each of these hashtags and the most "liked" comment under each video. On TikTok, the most "liked" comments are also the most viewed as they are displayed first when a user enters the comment section.

Next, we examined variability in narrative between two starkly opposing hashtags about mask effectiveness. We found substantial

Table 1

Comparison of 150 most viewed videos and liked comments for "Mask" and "Masks" hashtags^{a,b}

Metrics	Videos	Comments
Presence of healthcare professionals ^c	5.00%	.67%
Misinformation ^d	17.67%	5.67%
Citations using scientific journals ^e	4.00%	.00%

^a Data were pooled for "Mask" and "Masks" hashtags by averaging the percentage values gathered from the individual hashtags.

^b All authors contributed to gathering of data for all categories.

^c Direct measure of what percentage of videos/comments were created by healthcare professionals. It was determined manually by investigating profile information of video creators and commenters.

^d Direct measure of what percentage of videos/comments were classified as misinformation. It was determined using official CDC guidelines related to mask efficacy.

^e Direct measure of what percentage of videos/comments cited scientific publications. This included any written or oral reference to a peer-reviewed scientific journal.

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Table 2

Comparison of the 75 most viewed videos within the "WearAMask" hashtag and the five most "liked" comments on each video

Metrics	Videos	Comments
Presence of healthcare professionals	24.0%	1.60%
Misinformation	10.6%	9.30%
Citations using scientific journals	5.30%	.53%

disparities between the two hashtags "WearAMask," and "Masks-DontWork," displayed in Tables 2 and 3. For these hashtags, data were gathered using the 75 most viewed videos under each hashtag and the five most "liked" comments under each video.

This analysis of information about mask effectiveness in preventing transmission of SARS-COV-2 highlights an opportunity for researchers and clinicians to increase their influence on TikTok. Having an increased presence of professionals who provide medically accurate information on TikTok would almost certainly lead to improved health literacy of adolescent TikTok users.

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Table 3

Comparison of the 75 most viewed videos within the "Masksdontwork" hashtag and the five most "liked" comments on each video

Metrics	Videos	Comments
Presence of healthcare professionals	1.33%	1.06%
Misinformation	45.3%	32.3%
Citations using scientific journals	2.67%	.27%

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Eating Disorder in Teens During the COVID-19 Pandemic



To the Editors:

The COVID-19 pandemic has resulted in dramatic changes in children's daily lives. The vast social, economic, and mental health consequences are only beginning to be recognized and clarified. The increase in incidence of behavioral health problems is widely recognized, but a dramatic increase in restricted feeding disorders is not widely appreciated.

Our eight primary care pediatric offices care for more than 40,000 unique patients across eight sites. We evaluated unique patients, between ages 12 and 21 years, who were treated for diagnosis codes F50.* eating disorders. We compared the periods of April 1, 2019, to December 31, 2019, with the COVID-19 pandemic period of April 1, 2020, to December 31, 2020. There was a doubling of unique patients from nine in the prepandemic period versus 19 in the postpandemic period, despite virtually identical total visit numbers for this age group in the two time frames.

This is consistent with a recent report from Australia, which demonstrated a doubling of adolescent in-patient admissions during their COVID-19 lockdown [1]. Subsequent to our data review, the Royal College of Paediatrics and Child Health issued a public warning to clinicians and parents of a similar rise occurring in the United Kingdom.

This rise in visits for eating disorders during COVID-19 highlights the importance of recognizing the impact the pandemic has had on the mental health and well-being of adolescents. Our numbers likely reflect both a new diagnosis of adolescents with eating disorders during the pandemic as well as an increase in visits for adolescents who were previously diagnosed with eating disorders.

The COVID-19 pandemic has had profound social and emotional repercussions. It is not surprising that factors such as social isolation, increased use of social media, exposure to COVID-19-related news, school closures, and limited access to youth sports and activities have increased rates of anxiety and depression in our youth. As many adolescents with eating disorders have other mental health comorbidities, the rise in eating disorders is perhaps expected [2].

Beyond increasing anxiety and depression, eating disorders may worsen or be directly triggered by similar COVID-19-related

factors [3]. Adolescents find themselves more reliant on social media to connect to others. This increased exposure may impact body insecurities and restrictive eating patterns [4]. Lack of access to typical social supports and routines may make adolescents more vulnerable to worsening eating disorder behaviors.

In addition, the absence of structured learning has contributed to poorer sleep habits for many adolescents. Lack of adequate sleep has been associated with increased risk of anxiety and depression, and the persistence of poor sleep may also interfere with successful treatment of eating disorders [5].

As we continue to care for patients through this pandemic, it is important to recognize that during routine health care, we may encounter children struggling with eating disorders. Seldom do these patients present overtly. Often, the correct diagnosis is made only when clinicians probe deeper into eating habits and body image.

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