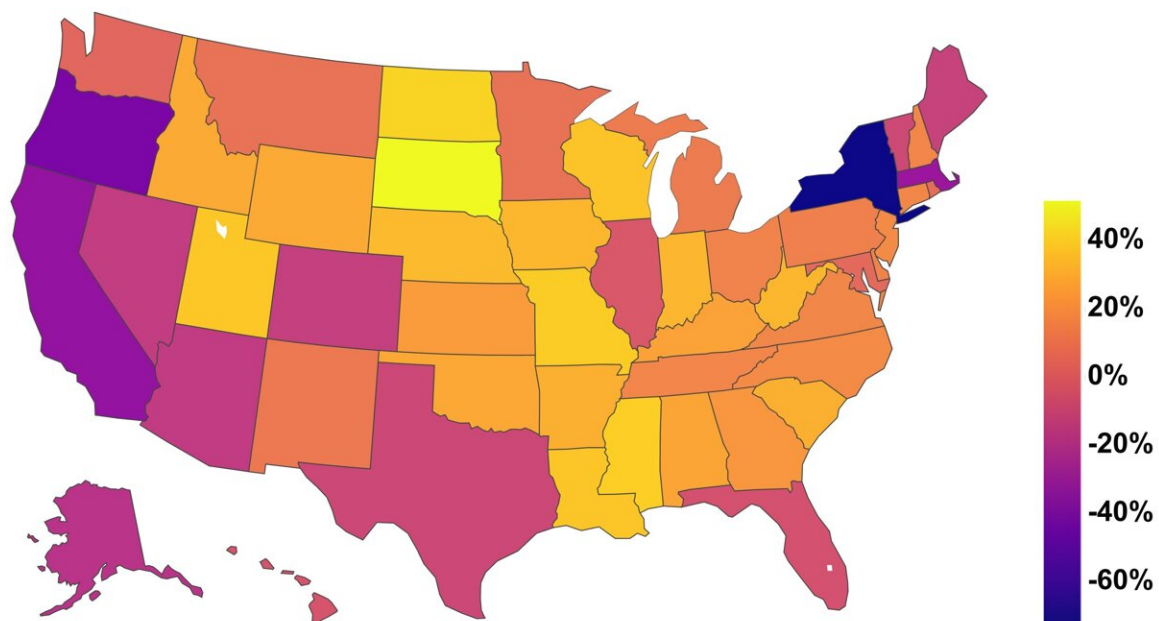


Study shows K-pop fans helped COVID-19 public health messaging go viral

October 5 2023



U.S. map illustrating percentage of increased viral boosts of COVID-19 public health tweets mentioning BTS, by state. Credit: Map by Ho-Chun Herbert Chang.

Three years ago, as part of the public health messaging in response to the

COVID-19 pandemic, the World Health Organization launched the "[Wear A Mask](#)" campaign on social media.

However, despite their benefits to public health, mask-wearing quickly became a highly politicized and divisive issue across the globe.

But the campaign gained impressive traction after World Health Organization Director-General Tedros Adhanom Ghebreyesus issued the following [tweet](#) on X, the [social media](#) platform known at the time as Twitter, on August 21, 2020, thanking BTS, a South Korean K-pop group, for supporting the mask-wearing public health practice as part of the release of their new single, "Dynamite":

"Thank you, #BTS for the uplifting #BTS_Dynamite and for reminding the #BTSARMY and the rest of us to #WearAMask and take care of our health and well-being during this #COVID19 pandemic."

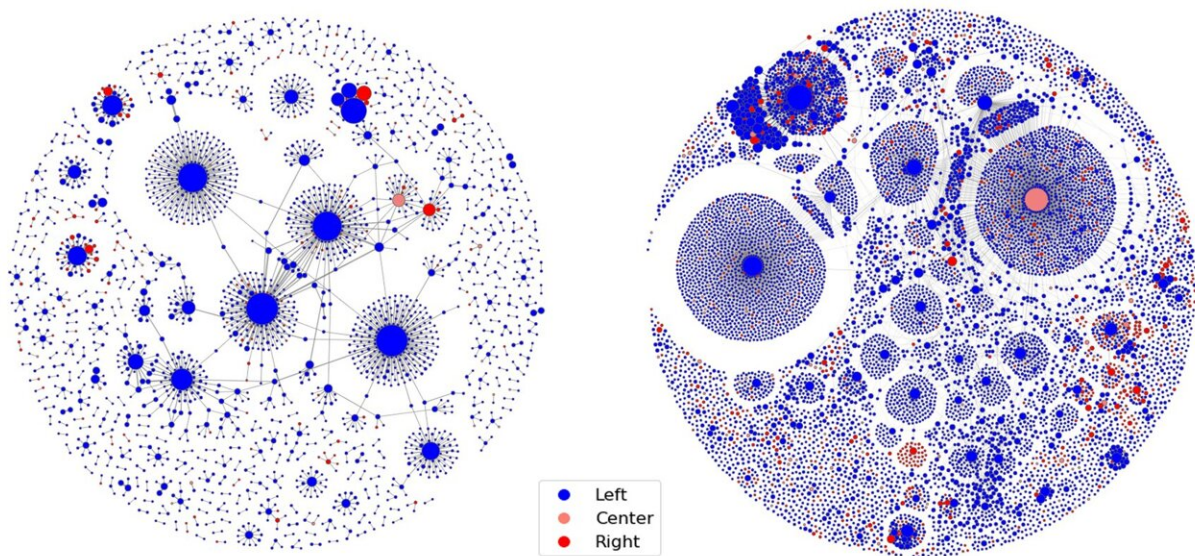
K-pop fans with different ideologies and from throughout the globe retweeted Tedros' message making it the most shared mask-wearing tweet.

When health officials and agencies such as Tedros leveraged entertainment groups like "#BTS" into their public health messages on COVID-19, this generated 111 times more virality or retweets, according to a new Dartmouth-led study.

The results are published in [Online Social Networks and Media](#).

"With the COVID-19 pandemic, government health agencies often became targets of partisan politics that challenged public health messages," says lead author Ho-Chun Herbert Chang, an assistant professor of Quantitative Social Science at Dartmouth. "If [government officials](#) and opinion leaders can leverage entertainers who are perceived

as neutral third-parties, this creates a powerful driving force for getting a public message out."



Network of users retweeting #WearAMask before (on left) and after (on right) the tweet referencing BTS by WHO Director-General Tedros Adhanom Ghebreyesus on August 21, 2020, within a four-month span. Nodes represent users and are labeled by their political diet, left-leaning (blue), central (pink), and right-leaning (red). Credit: Ho-Chun Herbert Chang.

"Through our study, we wanted to determine if social media still has the power to serve as a democratizing force as it did in 2010," says Chang.

Social media was perceived as such during [the Arab uprisings in 2010 and 2011](#) when pro-democracy protestors took to social media to speak out against the authoritarian regimes in Tunisia and Egypt.

"But after Brexit in 2016, when the United Kingdom officially voted to

leave the European Union and the Cambridge Analytica data breach in 2018, people became quite [pessimistic towards social media](#) and its lightning speed spread of misinformation as studies reported on how [social media can undermine democracy](#)," says Chang.

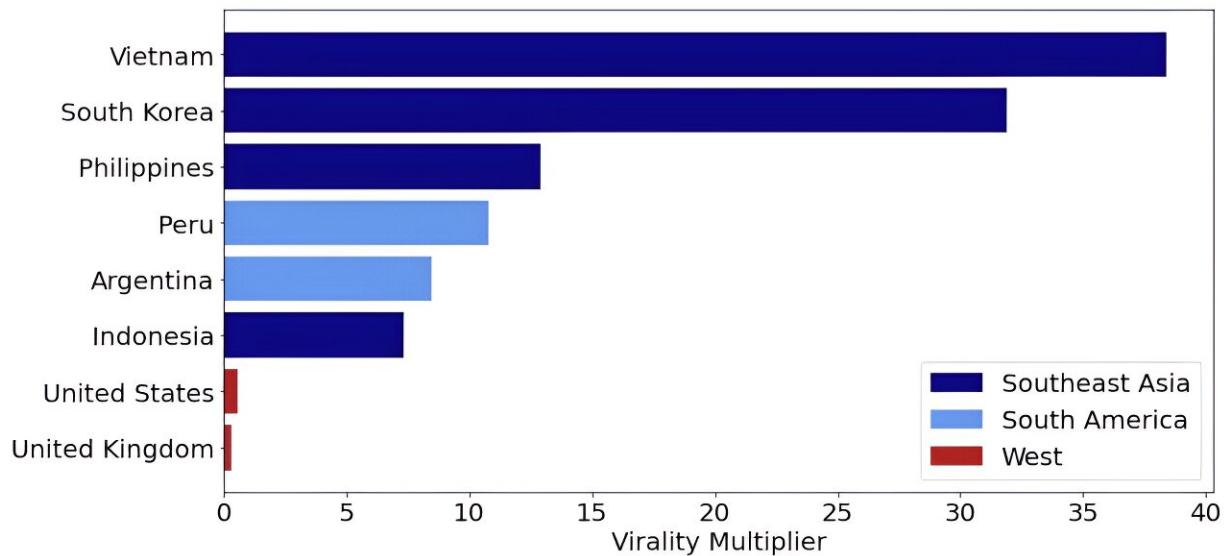
The researchers focused on one simple question: Who was the biggest voice on social media driving public health practices, particularly, mask-wearing?

Using the largest and most comprehensive public COVID-19 dataset on Twitter, the researchers analyzed 7 million tweets on mask-wearing. The team applied natural language processing to extract the tweets from a dataset of 3.5 billion tweets and then conducted a [social network analysis](#) to figure out how the tweets travel through the social network. They also looked at the use of K-pop specific hashtags: #BTS and #BTSArmy, as well as BlackPink and Twice, the two other most popular K-pop groups on Twitter.

The findings show that leveraging the popularity of BTS was part of the WHO's communications strategy on COVID-19 [public health](#) messaging.

The 16 unique tweets by [health officials](#) containing BTS, most of which were tweets by Tedros, generated nearly 234,600 retweets. In comparison, Dr. Tedros' 2,140 other tweets that did not mention BTS yielded 282,650 retweets. The 16 tweets mentioning BTS packed nearly the same punch (84% of the retweet value) as that of the 2,140 tweets without K-pop. So, tweets mentioning BTS garnered 111 times more virality or retweets.

The team also investigated the rates of mask-wearing tweets with and without BTS in all countries that use Twitter, which included assessing the rate of tweets in a country relative to its population.



COVID-19 public health tweets mentioning BTS had a significant virality increase in Southeast Asia and South America, and a moderate increase in the West. Credit: Ho-Chun Herbert Chang.

Tweets with K-pop saw a huge uptake in Western countries with the U.S. at the top. However, the increase of virality between retweets with K-pop over those without K-pop was largest in the [global south](#), including in Southeast Asia and South America, which as the researchers explain, are regions that are typically underserved by Western-based global organizations, while the West had a modest increase.

The retweet data showed Vietnam had a 3,840% increase (38.4 times more virality), South Korea had a 3,190% increase, Philippines had a 1,290%, Peru had a 1,080% increase, and Argentina had an 845% increase. In contrast, the U.S. had just a 56% increase and the United Kingdom had a 28% increase.

For BTS-related tweets in the U.S., the biggest viral boosts by percentage were observed in South Dakota (52%), North Dakota (41%), Mississippi (39%), Missouri (39%), Utah (37%), Louisiana (37%), Wisconsin (36%), and Nebraska (33%), most of which are heartland states.

As part of the analysis, the researchers examined users' political diets (left, center, and right) and the timelines of users, which enabled them to plot a retweet network of users before and after the Aug. 21, 2020, [tweet](#) by Tedros over a four-month span.

While left-leaning users dominated the network, the results showed that use of the #WearAMask hashtag by right-leaning users increased significantly after [BTS' appearance at the United Nations General Assembly](#).

Apart from K-pop, tweets mentioning Eric Ding, chief of the COVID Response Task Force at the New England Institute and Grey's Anatomy, the American medical drama, were the two other most popular drivers of mask-wearing messaging.

"There is a lot of criticism over hashtag activism; however, to support South Korea's COVID-19 relief efforts, [BTS fans donated money and ticket refunds](#) from BTS concerts canceled due to the pandemic, showing that the organizing potential of fandoms should not be underestimated," says Chang.

"Fandoms can act as powerful catalysts for online and offline collective action," says Chang. "They can generate interventions at a global scale."

More information: Ho-Chun Herbert Chang et al, Parasocial diffusion: K-pop fandoms help drive COVID-19 public health messaging on social media, *Online Social Networks and Media* (2023). [DOI: 10.1016/j.osnem.2023.100267](https://doi.org/10.1016/j.osnem.2023.100267)

Provided by Dartmouth College

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