

Six ways COVID-19 risk was expressed on social media during the early stages of the pandemic

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Recognizing the widespread use of Twitter as a mainstream news source for the American public, UCI researchers sought to investigate how

tweets about masks expressed COVID-19 risk perceptions in the first five months of the pandemic.

Their analysis described the history of American society's reaction to COVID-19 risk over time, showing that risk perceptions were expressed in a much more expanded range than objective rationale risk. Although a smaller proportion of mask tweets debated COVID-19 transmission routes and mask effectiveness, the largest proportion of mask tweets discussed the mask-related behavior of others. This finding attests to the [social experiences](#) that contribute to constructions of COVID-19 risk which, in turn, may motivate behavior.

Twitter provided the research team with a glimpse into how users made sense of risk during the pandemic. Users documented their experiences by including hyperlinks, hashtags, mentions often at political figures, videos, images and sharing these with their networks in real time, both amplifying and attenuating COVID-19 risk perceptions.

Study results revealed that users ascribed many meanings to mask wearing and at many levels, from relational aspects (e.g., behavior of others in the workplace) to government guidelines and policies. These findings suggest that [public health](#) messaging focusing only on increasing severity and threat will fall short of the desired response. Rather, a public health messaging approach that emphasizes social or group identity, or an approach that shifts mask messaging away from individual responsibility to emphasize workplace policy may have better success of acceptance given the mixed messaging occurring at the individual level.

Led by Suellen Hopfer, PhD, corresponding author and assistant professor of health, society, and behavior at the UCI Program in Public Health, the study illustrates the important role social media plays in contextualizing real-time reactions to public health crises. It also helps explain the ways in which social media functions to amplify and

attenuate risk. Findings are published in *PLOS One*.

The research team analyzed the content of more than 7,000 tweets about mask-wearing that reflected nearly 6,300 unique users from January to July 2020, a time when understanding about the pandemic-risk was still evolving and when only nonpharmaceutical interventions like mask wearing were available to mitigate risk. In addition to observing an overall increase in tweets about mask-wearing during the five-month period, they discovered six ways in which COVID-19 risk perception was expressed by the public:

1. **Severity:** Mask tweets that increased COVID-19 risk severity perceptions were expressed by sharing reports of increases in hospitalizations, ICUs at capacity, deaths, geographic hotspots and mask hoarding. Users' tweets that downplayed risk severity compared COVID-19 cases with the flu or car accidents.
2. **Who is at risk:** Tweets often included [personal stories](#) of getting sick and anecdotes of family and friends' experience with the virus. Descriptions of personal experiences amplified and downplayed risk perceptions, depending on whether the personal anecdote expressed adverse or asymptomatic COVID-19 outcomes.
3. **Mask effectiveness:** Users debated the effectiveness of masks by sharing personal opinions and anecdotal "evidence" about how the virus is spread.
4. **Political legitimizing of COVID-19 risk:** Through tweets, users reacted to statements and policies issued by elected officials and public health authorities like the Centers for Disease Control and Prevention and the World Health Organization.
5. **Mask guidelines and policies:** Users expressed confusion and frustration with conflicting public health messaging, citing contradictory guidelines and statements by elected officials.
6. **Mask behavior of others:** In what composed the largest

proportion of mask tweets, users described mask-wearing behavior in the context of daily life (e.g., wearing [masks](#) while commuting to work, traveling, and participating in social activities).

Study findings also showed how risk perceptions were dynamic over time. For example, early phases of the pandemic were dominated by discussions about who is at risk and sense making of risk severity while later phases were dominated by behavior of others and politicization of mask wearing.

More information: Suellen Hopper et al, The social amplification and attenuation of COVID-19 risk perception shaping mask wearing behavior: A longitudinal twitter analysis, *PLOS ONE* (2021). [DOI: 10.1371/journal.pone.0257428](https://doi.org/10.1371/journal.pone.0257428)

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