Medical Xpress

Investigating the impact of perceived experts as anti-vaccine influencers on social media

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The coengagement network of users tweeting about COVID-19 vaccines is divided into two large communities. Users are represented as circles and scaled by degree centrality. Edges connect users that were retweeted at least ten times by at least two of the same users. Colors indicate the two largest communities detected using the Infomap algorithm: anti-vaccine (pink) and pro-vaccine (green). Credit: Harris et al.

While medical professionals and scientific researchers are some of the most effective sources encouraging vaccination, a study finds that individuals who appear to be biomedical experts may also be important anti-vaccine influencers on social media.

Mallory Harris and colleagues investigated the scope and importance of perceived experts acting as potential anti-vaccine influencers to characterize the extent of this problem. The study is published in the journal *PNAS Nexus*.

Using a database of 4.2 million tweets containing keywords about COVID-19 vaccines from April 2021, a critical window for early vaccine uptake, the authors constructed a network of 7,720 accounts containing a large anti-vaccine community (1,879 accounts) and pro-vaccine community (2,241 accounts).

Within those communities, 13.1% of accounts (678 users) were characterized as perceived experts, based on educational or professional credentials in their profiles (for example, including "Dr." in a username). The authors did not attempt to verify the credentials of the perceived experts, focusing instead on how their expertise might be assessed by an online audience.

Perceived experts were strikingly common in the anti-vaccine community (9.8%), though less common than the 17.2% of users who were perceived experts in the pro-vaccine community.

In both communities, perceived experts were central in the networks and received more likes and retweets than users who were not perceived experts. Perceived experts in the anti-vaccine community shared both academic articles and sources likely to be misinformation.

According to the authors, potential interventions to reduce the impact of

anti-vaccine misinformation spread by perceived experts include public education on evaluating source credibility, mechanisms to verify credentials on social media platforms, and disciplinary actions by medical boards against health professionals who spread misinformation.

More information: Mallory J Harris et al, Perceived experts are prevalent and influential within an antivaccine community on Twitter, *PNAS Nexus* (2024). DOI: 10.1093/pnasnexus/pgae007

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