The online anti-vaccine movement in the age of COVID-19

A new report by the Centre for Countering Digital Hate (CCDH) has lambasted social media companies for allowing the anti-vaccine movement to remain on their platforms. The report's authors noted that social media accounts held by so-called anti-vaxxers have increased their following by at least 7·8 million people since 2019. "The decision to continue hosting known misinformation content and actors left online anti-vaxxers ready to pounce on the opportunity presented by coronavirus", stated the report. The CCDH warned that the growing anti-vaccine movement could undermine the roll-out of any future vaccine against COVID-19.

The report noted that 31 million people follow anti-vaccine groups on Facebook, with 17 million people subscribing to similar accounts on YouTube. The CCDH calculated that the anti-vaccine movement could realise US$1 billion in annual revenues for social media firms. As much as $989 million could accrue to Facebook and Instagram alone, largely from advertising targeting the 38·7 million followers of anti-vaccine accounts. Huge sums indeed, but it is worth noting that, in 2019, Facebook generated revenue of $70·7 billion.

A survey commissioned by the CCDH and released alongside their report found that around one in six British people were unlikely to agree to being vaccinated against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), and a similar proportion had yet to make up their mind. The survey, which polled 1663 people, found that individuals who relied on social media for information on the pandemic were more hesitant about the potential vaccine. WHO has warned of an infodemic of false information about COVID-19 spreading online. Around a third of respondents to a six-country survey by the Reuters Institute for the Study of Journalism reported that they had seen "a lot or a great deal of false or misleading" information about COVID-19 on social media during the previous week.

"Attention grabbing headlines with sensationalist content can attract even the savviest internet users and studies have shown they tend to generate more user engagement", warned the Organisation for Economic Cooperation and Development, in July, 2020. "As a result, content personalisation algorithms can repeatedly expose people to the same or similar content and ads even on the basis of disinformation."

The CCDH report divided the online anti-vaccine movement into four (sometimes overlapping) groups. First, campaigners work full-time to foment distrust in vaccines, but they only reach 12% of the total audience that follows the anti-vaccine movement. Second, entrepreneurs reach around half of the anti-vaccine following, exposing them to advertisements for products purporting to have health benefits. The CCDH report accuses Facebook of being a "shopfront for anti-vaxx products", directing customers to online marketplaces where these products can be purchased. Imran Ahmed, founder and chief executive officer of CCDH, advocates prosecuting vendors who make false claims about their products. "Going after a few high-profile hucksters who are exploiting and encouraging anti-vaccine sentiment to make money would be a powerful disincentive to anyone else considering choosing the same path", he said. Conspiracy theorists constitute the third category. Finally, there are the communities, which have a relatively small following and are mainly to be found on Facebook.

In 2019, several social media firms pledged to act against the anti-vaccine movement. Facebook announced that it would not recommend content that contained misinformation on vaccines.

YouTube removed advertisements from anti-vaccine videos, meaning the account holders would not make money, and Twitter ensured that the National Health Service or Department of Health and Human Services would appear as the first result for anyone searching for vaccine-related topics in the UK and USA, respectively.

In August, 2020, Facebook deleted a video posted by the US President, Donald J Trump, in which he suggested that children were "almost immune" to SARS-CoV-2, on the grounds that it contained "harmful COVID misinformation". Twitter suspended Trump's campaign account, which posted the same video. "The platforms genuinely want to tackle this problem", explained Heidi Larson, director of the Vaccine Confidence Project at the London School of Hygiene and Tropical Medicine. "Facebook have hired a lot of people to work on this and they are genuinely motivated to find answers. You often find that the staff in the social media firms are putting pressure on management to get things right—people want to feel good about where they work." Facebook uses fact-checkers to identify and label false information about COVID-19. Twitter has similar policies. Alongside Facebook, it has also offered free advertising space to WHO and national health authorities.

The CCDH is unconvinced. Their latest report, entitled *Failure to Act*, describes how out of 912 posts containing misinformation about COVID-19, fewer than one in 20 were dealt with by social media companies. Ahmed argues for a far sterner response: removing the anti-vaccine movement from the platforms. "The first step is to de-platform", he said. "Shutting down spaces and de-platforming individuals is the single most effective tool for dealing with these sorts of malign actors." Ahmed cites studies from counterterrorism, in which de-platforming was found

to cause networks to fragment. "It is the one thing that absolutely works. It cripples the networks and it is the best way to stop the anti-vaxx infection from spreading", he stated.

Vish Viswanath, Professor of Health Communication in the Department of Social and Behavioral Sciences at the Harvard T H Chan School of Public Health, disagrees. "De-platforming makes me nervous", he said. "This is an issue of freedom of speech. Unless you have a situation where there is blatant misinformation that is directly causing harm, you have to ask 'where do you draw the line?' You might have actors whose anti-vaxx activities are not taking place on their social media channel, are they also to be removed?" Shutting down conspiracy theorists and campaigners risks making them into martyrs and could even lend credence to their arguments that they are speaking truth to power. "You cannot just take away the stage, and assume these people are going to go away", adds Larson. "We are talking about very deep-rooted beliefs; they will simply find another stage."

The CCDH-commissioned survey found strong public support for sanctions such as financial penalties and advertising boycotts against social media companies that declined to remove "material designed to spread fake news or misinformation on vaccines". Ahmed points out that 98% of Facebook's revenues come from advertising. "If advertisers are scared off by the content on a site,

then there is a strong incentive for the platforms to remove it; we have seen plenty of examples of advertisers refusing to be associated with particular material", he explained.

Instead of de-platforming, Viswanath advises that vaccine advocates should be putting their energy into rebutting anti-vaccine arguments. "Groups such as the CCDH deserve a great deal of credit for calling attention to this issue, and adopting such a combative attitude", he said. "For much too long, the pro-vaccine groups have been reactive and reticent; they have assumed that science can speak for itself. That has not worked. We need to throw light on these malign actors, refute their arguments very aggressively and proactively."

Viswanath believes that the platforms are still not acting quickly enough. "They are making some tentative steps, but it is insufficient. It is not adequate to simply flag inappropriate posts; people will still read them and we know that even if a falsehood is labelled as such, people will still remember it, and some people will believe it", he said. "Our response has to draw on the science of how people develop these beliefs and then we can take up strategies to call the anti-vaxxers on their misinformation, rather than completely eliminate their voices." Ahmed counters that there is limited evidence on the efficacy of rebuttal. "The best way to stop someone from becoming an anti-vaxxer is to stop them from becoming infected in the first place", he stated.

"I want to reduce the R_0, rather than treat the disease."

Public attitudes towards vaccination can be split into three categories. First, there are people who have been persuaded of the merits of vaccination. In the UK and USA, this group constitutes somewhere between 70% and 90% of the population. Second, there are dogmatic anti-vaxxers. "These are people on the fringes", explains Viswanath. "They are not going to change their views." Between the two groups lies a third comprising people who are undecided. "These people have legitimate questions", said Viswanath. "They want to do the right thing, but they have doubts. This is where we need to be focusing our attention."

The anti-vaccine movement look as if they have already figured this out. A paper published in *Nature* earlier this year mapped online views on vaccination. The authors concluded that "although smaller in overall size, anti-vaccination clusters manage to become highly entangled with undecided clusters in the main online network, whereas pro-vaccination clusters are more peripheral". They warned that in a decade the anti-vaccination movement could overwhelm pro-vaccination voices online. If that came to pass, the consequences would stretch far beyond COVID-19.

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