

Research reveals a variety of opinions are crucial for 'fostering trust' in vaccination

May 20 2022



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University of Limerick, Ireland research analyzing global vaccine hesitancy has revealed that expressions of doubt are essential for promoting trust in vaccines.

The brand new study analyzing global data from more than 140 countries has revealed that partially-convinced people can help us in spreading trust towards vaccination as part of a "human chain of influence."

The research, which has just been published in the journal *Scientific Reports*, uncovered the surprising result that the presence of people expressing some doubts over vaccination is crucial for promoting trust to neutral people.

"Effective vaccines are our first line of defense against [infectious diseases](#) and future pandemics, but are useless if people cannot be persuaded to use them. How is it that people who have questions about vaccines so easily end up on the side of [vaccine](#) skeptics? This is the question we asked in the research," explained Dr. Dino Carpentras, lead author of the study and a Marie Curie Fellow at University of Limerick.

"People talk to each other every day, shaping each other's opinions. In our study we wanted to analyze how this happens, and if it could help us explain why neutral people are more persuaded by the vaccine skeptics."

The team started from the idea that the more similar two people's attitudes are, the more they will be able to influence each other. They then used computational models to test how this affects the propagation of trust in society.

"The results of the models are clear," said Dr. Carpentras. "Having enough people expressing minor reservations about vaccination can limit the influence of vaccine skeptics."

The research reveals that the results depend on thinking of beliefs and attitudes in society as an ecosystem.

"If you have some doubts about vaccination, then who will be most open

to discussing them with you?" explained Dr. Adrian Lüders, a co-author on the study and post-doctoral researcher at UL's Social Dynamics Lab, Department of Psychology, Centre for Social Issues Research.

"A person with complete trust will struggle to influence a neutral person, as they are too different. However, a partial truster could act as an intermediary between the two, producing a human chain of influence."

Further analysis confirmed that countries that had a "break in the chain" between the positive and the neutral position toward vaccination performed worse, the research team explained.

The weaker the chain of influence between people with full trust and neutral people, the lower level of vaccine coverage in the following year, and the larger the increase in the number of vaccine skeptics.

This research also provides some direction for future vaccine campaigns. Simulating different strategies, the team has shown that promoting trust without considering the opinion system could produce waves of distrust.

"When promoting vaccination, we may target mainly people who already have a good level of [trust](#) as they will be the easiest to persuade," explained Dr. Mike Quayle of UL's Department of Psychology, who was also an author on the study.

"However, this may decrease the number of intermediaries in the chain, thus leaving the neutrals more exposed to the skeptics."

However, not all interventions pose this risk. Indeed, with a series of simulations, the team has showed how it is possible to increase the number of people trusting vaccination while preserving or even strengthening the chain of influence.

"Our models show us that we need to work hard to ensure that our vaccine belief system is in good shape for the next public health crisis," said Dr. Carpentras.

Dr. Quayle added that "the real heroes in our pandemic response were the people who had some doubts, but got vaccinated anyway."

More information: Dino Carpentras et al, Mapping the global opinion space to explain anti-vaccine attraction, *Scientific Reports* (2022). [DOI: 10.1038/s41598-022-10069-3](https://doi.org/10.1038/s41598-022-10069-3)

Provided by University of Limerick

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