

Vaccine misinformation and social media

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Immunization syringes. Credit: U.S. Air Force photo/Airman 1st Class Amber E. Jacobs

People who rely on social media for information were more likely to be misinformed about vaccines than those who rely on traditional media, according to a study of vaccine knowledge and media use by researchers at the Annenberg Public Policy Center of the University of

Pennsylvania.

The study, based on nationally [representative surveys](#) of nearly 2,500 U.S. adults, found that up to 20% of respondents were at least somewhat misinformed about vaccines. Such a high level of [misinformation](#) is "worrying" because misinformation undermines vaccination rates, and high [vaccination rates](#) are required to maintain community immunity, the researchers said.

The study, published in the *Harvard Kennedy School Misinformation Review*, was conducted in the spring and fall of 2019, when the United States experienced its largest measles outbreak in a quarter century. Between the two survey periods, 19% of the respondents' levels of vaccine misinformation changed in a substantive way—and within that group, almost two-thirds (64%) were more misinformed in the fall than in the spring.

Media consumption patterns helped to explain the change in misinformation levels, the researchers found. Those respondents who reported increased exposure to information about measles and the MMR (measles, mumps, and rubella) vaccine on social media were more likely to grow more misinformed about vaccines. By contrast, those people who reported an increased exposure to news accounts about those topics in traditional media were more likely to grow less misinformed about vaccines.

"People who received their information from traditional media were less likely to endorse anti-common vaccination claims," said lead author Dominik Stecula, a postdoctoral fellow in the science of science communication program at the Annenberg Public Policy Center (APPC). He co-authored the study with Ozan Kuru, another APPC postdoctoral fellow, and APPC Director Kathleen Hall Jamieson.

The result is consistent with research suggesting that social media contain a fair amount of misinformation about vaccination while [traditional media](#) are more likely to reflect the scientific consensus on its benefits and safety, according to the Annenberg researchers.

'Worrying' levels of vaccine misinformation

The researchers found that:

- 18% of respondents mistakenly say that it is very or somewhat accurate to state that vaccines cause autism;
- 15% mistakenly agree that it is very or somewhat accurate to state that vaccines are full of toxins;
- 20% wrongly report that it is very or somewhat accurate to state that it makes no difference whether parents choose to delay or spread out vaccines instead of relying on the official vaccine schedule from the Centers for Disease Control and Prevention (CDC);
- and 19% incorrectly say it is very or somewhat accurate to state that it is better to develop immunity by getting the disease than by vaccination.

Medical experts and media consumption

The researchers also found that an individual's level of trust in medical experts affects the likelihood that a person's beliefs about vaccination will change. Low levels of trust in [medical experts](#) coincide with believing vaccine misinformation, the researchers said.

In addition, the research found that vaccine misinformation proved resilient over time. Most of those in the sample (81%) were just as informed or misinformed in the spring (February/March) as they were

months later, in the fall (September/October), despite the extensive news coverage of the measles outbreak and attempts by the CDC to educate the public. Among the 19% whose level of knowledge changed substantially, 64% were more misinformed and 36% were better informed.

The researchers point out that although the findings only show correlations between media coverage and individual attitudes—not causation—these findings still hold implications for the effectiveness of national pro-vaccination campaigns, the role of health professionals in addressing misinformation, and the impact of social media misinformation.

The findings, Kuru noted, come as a number of states have been debating whether to tighten their laws surrounding vaccination exemptions and [social media](#) companies have been wrestling with how to respond to different forms of misinformation.

The researchers said this study suggests that "increasing the sheer amount of pro-vaccination content in media of all types may be of value over the longer term." They said the findings also underscore the importance of decisions by Facebook, Twitter, YouTube and Pinterest to reduce or block access to anti-[vaccine](#) misinformation.

More information: Dominik Andrzej Stecula et al, How Trust in Experts and Media Use Affect Acceptance of Common Anti-Vaccination Claims, *Harvard Kennedy School Misinformation Review* (2020). [DOI: 10.37016/mr-2020-007](https://doi.org/10.37016/mr-2020-007)

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