



Insights

Fear of Adverse Effects and COVID-19 Vaccine Hesitancy: Recommendations of the Treatment Expectation Expert Group

Winfried Rief, PhD

The current pandemic has posed an unrepresented challenge on many levels. Therefore, the development of vaccines was eagerly awaited, and the first breakthroughs were celebrated. However, it soon became clear that to end the pandemic, we would have to address another ubiquitous problem: the widespread hesitancy toward or downright rejection of vaccination. To achieve population immunity, a large majority of people has to participate. However, in a [recent survey](#) of US health care workers, 48% had not yet been vaccinated, and of those, 18% did not plan on receiving a COVID-19 vaccine because of concerns over adverse effects and the vaccines' newness.

Health care decisions, including whether to take part in vaccination against COVID-19, are based on the comparison of the potential costs of participation with the expected benefits. Costs can span a variety of factors, but fear of adverse effects has featured prominently in recent surveys. As extensive research of our groups and others on nocebo effects has shown,¹ it is—ironically—this very same fear that can amplify and even induce adverse effects. Therefore, addressing concerns by providing evidence-based information as part of larger information campaigns and individual conversations is key to increasing vaccine uptake. We present a number of strategies that can be adopted to target a fear of adverse effects.

Author affiliations and article information are listed at the end of this article.

Providing Accurate Information About Vaccination Adverse Effects

Acknowledging that vaccines can cause unwanted effects and that concerns about adverse effects are understandable is an important first step in any conversation about concerns. This is particularly relevant for those who have experienced adverse effects in the past or are more likely to be affected. However, it is also worth pointing out that most people experience no or only mild adverse effects. It is also important to explain that not all symptoms that occur following vaccination are caused by the vaccine. In fact, the major trial investigating the Pfizer-BioNTech vaccine, which included more than 40 000 people, reported fatigue rates after the first shot in the placebo group of 23% to 33%, headache rates of 18% to 34%, and muscle pain rates of 8% to 11%.² Easy access to medical advice when adverse effects occur is pivotal to build trust and address concerns before they trigger a level of fear that amplifies the negative experience.

Positive Framing of Mild Adverse Effects

Legal regulations demand full transparency about potential side effects. However, the way this information is presented strongly influences decision-making and perceptions of symptoms. Instead of stating the probability of experiencing a particular adverse effect, we can provide the probability of not experiencing this effect. Moreover, instead of offering a noncurated list of all possible adverse effects without an estimate of their likelihood to occur, we can provide more graduated information about the likelihood of experiencing an adverse effect (eg, from very common to very rare). Lastly, while severe adverse effects are of course a matter of concern and need to be monitored closely, mild forms of fever, muscle pain, or fatigue also indicate that the immune system is responding appropriately to the vaccine. Pointing out the healthy nature of reactogenicity can help the individual

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experience adverse effects in a less threatening manner and thereby avoid the amplifying effect of fear.³

Balancing Risk and Benefit Information

Beyond the future protection of the individual, the benefits of receiving the vaccination may be less obvious. These benefits need to be communicated to balance out the more readily available information about risks and adverse effects. Conveying the relevance of the societal impact of the individual's decision and appealing to their altruistic motivations are particularly important for groups that are less likely to become severely ill if infected (eg, adolescents).

Providing Easy-to-Access and Easy-to-Understand Information

While negative information about vaccinations is usually easy to find in the form of lead stories on mass and social media, constructive information is often noticeably absent. Strategic placement of key information in physical and virtual places where people spend time can help to spread the word beyond scientific journals. Modern science has found new and exciting ways to leave its ivory tower and use social media platforms to convey complex or less intuitive information and engage in a dialogue with those it is aiming to reach (eg, [Dear Pandemic](#)).

Addressing Misinformation About Adverse Effects

Misinformation about consequences of vaccination can range from half-truths and unfounded speculations to targeted disinformation rooted in conspiracy theories. As far from our current scientific understanding as they might be, misinformation can shape people's perceptions and decision-making if left unchallenged and lead to a self-perpetuating cycle of negative news.⁴ People who are exposed to negative information about medication in the media report more adverse events, thereby increasing and validating other people's concerns. Therefore, conversations about vaccine adverse effects need to address common misconceptions without elevating them through public discourse. However, clinicians need to be aware that further actions may be needed when working with people with higher levels of anxiety because providing correcting information does not necessarily decrease vaccination hesitancy.⁵

Information campaigns on vaccinations are commonly tailored to those who are vaccine hesitant, ie, individuals who have not yet decided whether the benefits outweigh the costs of getting vaccinated but who are open to information to inform their decision. Hesitancy usually involves mistrust of vaccine benefit, worries about future unknown effects, concerns about commercial profiteering, or a preference for natural immunity. It is important to identify the predominant belief and focus discussion or information in this area.

Research on placebo and nocebo effects has shown that expectations become the filters through which we perceive the world. What determines these expectations is far broader than our knowledge about vaccines and their effect on the virus. Decision-making about whether to participate in vaccination programs is influenced by those around us, by the way we incorporate or dismiss evidence, and by our willingness to accept individual costs for the greater good. Trustworthiness and a societal commitment to equity encourages people to receive the vaccine.⁶ The extent to which we are able to integrate these aspects in our vaccination campaigns will determine their success.

ARTICLE INFORMATION

Correction: This article was corrected on April 22, 2021, to fix a typo in the title.

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Corresponding Author: Winfried Rief, Ph.D., University of Marburg, Gutenbergstr. 18, 35037 Marburg, Germany (rief@uni-marburg.de).

Author Affiliation: Clinical Psychology, University of Marburg, Germany.

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Additional Contributions: The members of the Treatment Expectation Expert Group who coauthored these recommendations were Arthur J. Barsky, MD (Department of Psychiatry, Harvard Medical School), Ulrike Bingel, MD (Department of Neurology, Center for Translational Neuro- and Behavioral Sciences, University Medicine Essen), Luana Colloca, MD (School of Nursing, University of Maryland), Keith J. Petrie, PhD (Faculty of Medical and Health Sciences, University of Auckland), Winfried Rief, PhD (Clinical Psychology, University of Marburg), Manfred Schedlowski, PhD (Medical Psychology, Center for Translational Neuro- and Behavioural Sciences, University Medicine Essen), and Katja Wiech, PhD (Nuffield Department of Clinical Neurosciences, University of Oxford).

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