

Overcoming COVID-19 vaccination hesitancy – arguments and approaches that can make a difference

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The success of COVID-19 vaccination programmes is highly dependent on vaccine uptake. Similar to earlier experiences with HPV vaccination for cervical cancer,¹ acceptance of COVID-19 vaccination varies considerably within and between countries.² Although attitudes towards COVID-19 vaccination in 15 high-income countries have improved between November 2020 and February 2021,² concerns remain, especially over widespread intra-country disparities related to age, socio-economic status, educational background, and ethnic background, as well as the emergence of antivaccine movements.³⁻⁵

On January 6th, 2021, the Netherlands started vaccinating while the average vaccination acceptance stood at 75%, with lower rates among young people and those with a migration background.⁶ In order to address health inequalities and achieve high vaccination coverage, also among groups at low risk for severe COVID-19, it is important to identify people's most relevant beliefs and values, information needs, and their perceptions of trustworthy sources of information. Such data are valuable for an effective public information campaign.⁷⁻⁹

A citizen forum is an established deliberative method for information gathering, reflection, and public engagement that allows quasi-experimental study designs to assess changes over time.¹⁰ We organised an online citizen forum in which participants discussed a series of predefined topics related to COVID-19 vaccination. It took place over three days spread over two weekends at the end of January, with 23 carefully selected participants of diverse backgrounds in terms of age, sex, migration status and urban/rural residence, and about half of them vaccine-hesitant. Information videos were shown and eight top-experts in virology, epidemiology, behavioural sciences, ethics, and health economics joined the forum to answer questions and address concerns expressed by the participants. All deliberations were video-recorded. Participants completed a survey before and after the forum, to assess individual changes in vaccination intention. Ten participants who had changed most were interviewed individually after the forum was completed to ascertain their argumentation.

During the forum 14 out of the 23 participants changed their vaccination intention, of which 11 became more favourable and three more dismissive. Changes in responses to 34 statements are shown in the online supplementary appendix <add hyperlink>. The individual interviews revealed four main themes on which newly acquired insights had influenced vaccination acceptance. The most important theme is vaccine safety of which participants stated that experts' explanations about vaccine composition, evidence on side-effects (or rather the lack of evidence on long-term side-effects), and the exceptionally short vaccine development and approval processes had eased their concerns. The second theme concerns the working mechanism and efficacy of vaccines. Regarding personal benefit of vaccination (the third theme), participants reported they had not only become more aware of the need to protect oneself from developing severe COVID-19, but also that restrictive measures might at some point be eased for someone who can show proof of vaccination. Lastly, the theme of societal benefits relates to protection of others against severe infections, helping to avoid overburdening of hospitals, and the realization that restrictions could be lifted faster for everyone if more people are vaccinated.

This study shows that COVID-19 vaccination acceptance among people who have doubts is dynamic and potentially fragile. The analyses reveal that unclear or contradictory information, irrespective of their source (e.g. campaigns, press conferences, social media), may affect people's confidence and vaccination acceptance. The determinants at play for those who refuse to be vaccinated or who are undecided, even after the forum, are

distrust (in particular general suspicion about the government's intentions), uncertainty ("not everything is 100% known yet"), and the perceived risk that vaccination might jeopardize their health.

In general, participants wish for more transparency and honesty, both from experts and the government, about what is known about vaccination and aspects that require further investigation. They request neutrality of information provision and reject coercion. They further prefer to see more room in the media for recognised experts rather than lay people expressing their personal views. Four implications for public health campaigns are derived: (1) ensure full transparency on safety, effectiveness, and uncertainties surrounding COVID-19 vaccination; (2) organise information provision by independent experts on vaccine composition, side-effects (including long-term side-effects once evidence becomes available), and benefits of vaccination; (3) provide opportunities for citizens to discuss their concerns and doubts with independent experts; (4) stimulate reflection and deliberation how to weigh personal (health, liberties), social (protection of others), and societal benefits (continuity of healthcare provision, lifting restrictions) of COVID-19 vaccination.

We declare no competing interests.

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