



Expressions of doubt and concern in relation to COVID-19 vaccination: a mixed methodological approach.

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On 6 January 2021, the Netherlands implemented a pro-vaccination campaign against the coronavirus. In support, the RIVM Corona Behavioural Unit carried out a study on the concerns, doubts and needs of people with regard to the Corona vaccination. This study was conducted during a second hard lockdown in the Netherlands (14 Dec - 15 Jan) when the number of infections was stable.

Purpose/research question

We set out to determine the attitudes and opinions which play a role when people are deciding whether or not to get vaccinated against the coronavirus. We did this by examining people's questions and doubts in relation to the pro-vaccination informational campaign. Findings offer insights on how the informational campaign was received and provide routes toward improved government communications.

Methods

This report comprises results from the following studies:

- Measurement 9 of the RIVM behavioural cohort survey (30 December 2020 to 3 January 2021; approx. 51,000 participants)
- Telephone interviews (11 to 14 January 2021) with 60 respondents who in the survey indicated that: a) they did not want to be vaccinated, b) had not yet thought about it, or c) still had doubts about whether or not to get vaccinated
- Open responses to the question as to whether the person intended to get vaccinated were coded from Measurement 8 (11 to 15 November 2020; approx. 4,700 participants)
- Trend Study compiled for the Dutch government's Coronavirus Dashboard (5 to 11 January 2021; 5000 participants).

Most important findings

Vaccination willingness: Willingness to get vaccinated has significantly increased from 48% (Measurement 9, 10-16 November 2020) to 75% (Measurement 10, 5-11 January 2021) in recent times. Vaccination willingness also increases with age: for people aged 70 or older this is substantially higher (90%) than for people between the ages of 16 and 24 years (63%). The largest difference was measured for the 55+ age group (69% for those between the ages of 40 and 54 years, and 83% amongst people between the ages of 55 and 69 years). Differences between people of different sex and educational levels are smaller ($\leq 7\%$).

- **Changes in vaccination willingness:** A substantial number of people interviewed had changed their mind about being vaccinated or not, within a short period of time, usually after watching TV programmes with (medical) experts who explained the development, effectiveness and safety of the vaccines.
- **Considerations relevant to the decision:** The worries and questions that occupied the minds of people were largely the same, regardless of whether they decided to be vaccinated or not.

- **Arguments in favour of vaccination:** 'Protecting others' and 'the way out of the crisis' were mentioned as the primary reasons for vaccination.
- **Arguments against vaccination:** The primary reason for anti-vaccination sentiments were unknowns about long-term medical effects. This was often the determining factor for interview participants who had not (yet) made up their minds about getting vaccinated (e.g. young women questioning the consequences of vaccination for their fertility).
- **Wait-and-see attitude:** A large percentage of the interview participants stated that more knowledge (regarding long-term consequences and effectiveness) could give them greater confidence in the vaccine and could increase willingness to be vaccinated.
- **Information needs:** People are looking for information about the effectiveness and consequences in the long-term. Those who have a medical condition feel the need to consult a trusted advisor such as their general practitioner, treating physician, or interest group, before making a decision. Some people start looking for information only after receiving an invitation.
- **Vaccination coverage cuts both ways:** An increasing/high vaccination rate works as a driver (greater confidence in safety/effectiveness) as well as a barrier (if already high, 'I no longer need to do it': known as 'free-riding').
- **Vaccination and compliance with behavioural measures:** Many interview participants thought that the core COVID-19 safety measures would still be necessary until the vaccination campaign will have had a visible effect on the number of infections. Although compliance with COVID-19 safety measures will still be feasible, people find the limits put on social contacts difficult.

Points of attention for communication (based on these results)

- **Target groups:** Easy-to-understand information on the effectiveness and side-effects of the vaccines in the long term, and on compliance with safety measures during the vaccination period, is relevant for everyone and should, therefore, be made available to everyone. Specific information is needed for people with a medical condition or who have specific concerns (such as young women concerning their fertility).
- **Channels and the media:** Provide information about vaccination through reliable channels such as medical experts in chat shows, general practitioners, and professional patient associations.
- **Content:** Provide accurate information about the effectiveness of vaccines for the person being vaccinated as well as the degree of protection it offers for others (including the uncertainties which still exist in this regard). Make information available about possible short-term and long-term side-effects. Explain how vaccinating creates a way out of the crisis. And make it clear at which degree of population level vaccination coverage is expected to reduce the pressure on the overburdened health system (perspective). Try to limit 'free-riding' by discussing it openly and illustrating the importance of having a high vaccination coverage. One's own health, the health of family members and friends, and the interests of society as a whole all play a role in this regard. Ideally, all these issues should come together in a narrative that is clear and transparent for every citizen.

- Duration:** It is important to ensure that accurate information is offered proactively throughout the vaccination period (using updates, specific questions and concerns, et cetera). Address problems that could become particularly difficult in the later phases of the vaccination campaign now: is there still enough social urgency to ensure compliance with the behavioural rules and vaccination of the low-risk groups?

For points of attention with regard to **Context** and **Control**, please refer to the previously published memo "[Exploration of factors that influence participation in COVID-19 vaccination](#)".

Changes in vaccination willingness

Willingness to be vaccinated has increased significantly, from 48% (Measurement 10 to 16 November 2020) to 75% (Measurement 5 to 11 January 2021) and increases with age (see Figure 1: Vaccination willingness and age). In January, the percentage of people older than 70 years who were willing to become vaccinated was 90%, which was substantially higher than it was in people between the ages of 16 and 24 years (63%). The largest difference was measured in people at the age of 55 years (69% in the 40-54 year age bracket, and 83% at 55-69 year age bracket). Differences between people of different sex and educational level were smaller ($\leq 7\%$). Changes in vaccination willingness were reasonably consistent over all age groups.

Of the 60 people interviewed, there were 18 who had indicated in the questionnaire survey that they still had not made up their minds but, during the interview (2 weeks later), had changed their opinion (from 'maybe' to 'yes' or to 'likely yes but still with some serious concerns').

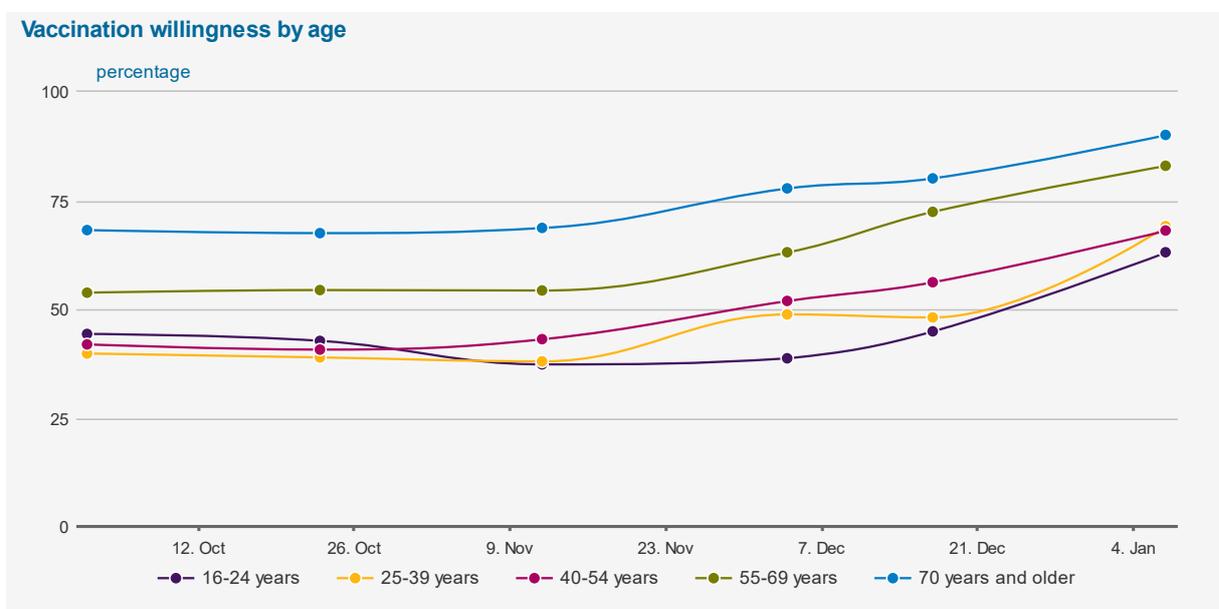


Figure 1: Vaccination willingness and age (Dutch government's Coronavirus Dashboard)

Continuum: a wide range of perspectives

In the open-ended answers taken from Measurement 8 in mid-November (Appendix 1) and in the interviews, a wide range of responses and feelings were expressed about the vaccine. These varied from relief to suspicion. One striking aspect was that the vaccination willingness of the interviewees could not be divided into clear categories, but had to be placed along a spectrum so that varying attitudes and opinions could be expressed throughout the entire range. At one end, negative arguments dominated and respondents indicated that they 'definitely do not' want to be vaccinated. As the share of positive arguments increases along the spectrum, respondents tend to move from 'have some doubts and probably not', to 'have some doubts but probably yes, and finally to 'definitely yes'. It is important to note that even people who said that they were very willing to be vaccinated, clearly still had concerns about various matters, including the uncertainty surrounding side-effects. A change in some attitudes (e.g., wait-and-see approach) or information could lead to a change in vaccination willingness. The relevant attitudes that were identified in the interviews are explained below.

Arguments in favour of vaccination

The most common reasons expressed by interviewees in favour of vaccination were to protect others. This was usually the most important reason put forward by people who wanted to be vaccinated. These were also the most common reasons given in the open-ended questions asked in the Measurement 8 questionnaire (see Appendix 1). The next most commonly-mentioned reason put forward by the interviewees was that they are doing it for the 'greater good', in other words 'contributing to a way out of the crisis'. Furthermore, the interviewees mentioned as reason to get vaccinated that they could then engage in more social contacts and hug other people, or that they could take part in more activities again during their free time.

Comparison with other vaccines

Some of the interviewees stated that they had thought about getting vaccinated or not, and had come to the conclusion that it was no different than it is with other vaccines where you 'simply get vaccinated' for a trip to a foreign country or for the annual flu jab. This was also frequently mentioned by respondents in the Round 8 questionnaire (mid-November) as a reason for their willingness to be vaccinated against COVID-19.

"It's actually rather strange that, before going on holidays to a foreign country, you simply go to the municipal health service for a vaccination without really knowing exactly what you are letting them put into your body, whereas it has now become such a big issue in a much more urgent situation."

Trust in institutions

Finally, a small number of respondents in the interviews and questionnaires stated that they had confidence that the government was acting for the good of society and that the scientific community was acting responsibly and carefully.

Arguments against vaccination

The most common reason put forward for not (yet) being willing to be vaccinated was uncertainty about the long-term consequences of the vaccines. This is reflected, for example, in respondents' doubts about the effectiveness of the vaccine and the duration of its effectiveness. For example, some respondents were uncertain about whether the vaccine is also effective against the mutated variants of the virus, such as the British and South African variants, and how long the vaccine provides protection.

"If it is only effective for three months, then I won't get it."

In addition, there were also concerns about potential (as yet unknown) long-term side-effects. In this context, some people referred to examples of other medications which were discovered to have negative side-effects over the long term. Young women expressed concerns about the potential effect on fertility and, therefore, their future chances of having children; this was a strong argument against being vaccinated.

"If I personally have to weigh up the potential consequences for my fertility against the fact that I am working with a vulnerable target group, then my wish to have children would be the deciding factor. But I find it a very difficult decision, and it also feels selfish."

Some interviewees also expressed concerns about the direct personal negative consequences of the vaccination in relation to the use of medication and/or having a medical condition. Such concerns primarily had to do with a lack of knowledge about the side-effects of the vaccine in relation to their specific medical condition. For a number of interviewees who had a medical condition, a recommendation from the specialist was the determining factor.

"I let myself be guided by the recommendation of my cardiologist. I am not against vaccinations, but I am also a heart patient and any potential side-effects are, therefore, of critical importance."

Sources of concern

Concerns about the long-term effects seem partly related to the rapid development of the vaccine, the speed of which has raised questions about the safety of the vaccine and any potential (long-term) side-effects. However, concerns regarding the safety of the vaccine have diminished since the end of October.

A few interviewees also indicated that they were specifically distrustful of the mRNA vaccines, as these, in their opinion, were very new and had not yet been sufficiently tested. Others expressed doubts because they would not know beforehand which brand of vaccine they would be getting. In their opinion, attention should be specifically focused on which vaccine is the least risky for which people. Some interviews made it clear that there is a need for choice in terms of the brand of vaccine and for a form of coordination, for example with the general practitioner, regarding the vaccine.

Various interview and questionnaire respondents indicated that risk perception played a role, and that they expected that they would be fairly resistant to the

coronavirus anyway. This was a reason why some people did not feel that they needed to be vaccinated themselves, and some indicated that they considered the risks associated with the vaccination to be more serious than the risks associated with being infected by the virus.

Distrust in institutions

Finally, distrust of the government, or the pharmaceutical industry, was a reason for a decreased vaccination willingness among some respondents.

Wait-and-see approach

Some of the interviewees had a wait-and-see approach with regard to the vaccination campaign. They indicated that they did not mind standing further back in the vaccination queue. Main reason is the expectation that more knowledge would become available regarding (long-term) side-effects, effectiveness in general, duration of effectiveness, and vaccine safety.

"I find it a challenging step and am happy that it will not be my turn for some time yet. I prefer to wait and see for a while until more is known about the vaccine and what its consequences will actually be. When that becomes clear, I will join the queue but somewhere in the rear."

This attitude was also evident in the open-ended answers: a significant proportion of the respondents weighed up the effectiveness of the vaccine against the potential long-term side-effects (risk assessment).

Decision to be vaccinated or not is not yet necessary

In addition, various interviewees indicated that the situation was not urgent enough for them to make a decision now, or that they had not yet thought 'all that much' about being vaccinated, as the vaccine would not be available for them for some time still. They would decide whether or not to be vaccinated only when the invitation arrived in the post. These people indicated that they needed information that was not yet available, such as the long-term effects and (possibly differing) effects of different vaccines. However, some said that they expected increased knowledge about the vaccine over time to result in greater confidence and, therefore, also an increased willingness to be vaccinated.

"I am not really thinking much about it yet, as it is not my turn yet. It is not relevant for me at the moment. And if I do look for information about it now, then what I read - especially on Facebook - is that there are lots of things that are still uncertain. If it's my turn and I still have doubts, then I'll look it up then. I'm not going to stress out about it now."

Vaccination coverage cuts both ways

For respondents, vaccination coverage in the future seems to be a reason for being vaccinated as well as a reason for not being vaccinated. A higher degree of vaccination coverage reduces the concerns about the long-term effects.

"The more people that are vaccinated, the safer it is for me to also be vaccinated."

But vaccination coverage also influences the need people felt to also get vaccinated. Within that context, a higher level of vaccination coverage could be a

reason for not doing it, and a lower level of vaccination coverage could be a reason for actually getting vaccinated.

"If I see that few people are willing to get vaccinated, then I would be more likely to get it myself, because I could make a bigger difference then."

Vaccination coverage, therefore, seems to influence people's perceptions regarding safety on the one hand as well as the social significance of one's own vaccination on the other.

Information needs

Questions and uncertainties

Interviewees had searched for information about the above-mentioned concerns such as the effect of mRNA vaccines, the effect on fertility, long-term consequences, vaccine safety in relation to vulnerable health, duration of effectiveness and vaccine coverage.

Information sources

Although not everyone indicated that they were already (actively) searching for information, those who had did so by looking at the TV (news programmes such as Op1 and Jinek or the eight o'clock news), Facebook, newspapers, and asking acquaintances (for example, medical professionals or teachers). The special programme on the coronavirus broadcast on 5 January was mentioned by most of the viewers in a positive light: *"it removed my doubts"*, but at the same time it reinforced some people's negative opinion as they described it as *"the big good news vaccination show"*.

Cue to action

For many of the interviewees who indicated that they had switched from previously being in doubt, to being positive and saying yes to the vaccine, there was a clear *cue to action* – this was provided particularly by TV programmes with doctors which convinced them. These kinds of informative programmes (and also newspaper articles) provided people with more knowledge and confidence about the vaccine, which helped them to make a choice.

"If I see a reputable doctor on TV who answers a number of questions, then it makes me more relaxed and, despite my doubts, also gives me confidence to be vaccinated."

Medical condition

Interviewees with a medical condition waited for information from their treating physician, or from the interest group that provided information to the specific patient group in question (for example, the Anticoagulation Clinic or Heart Foundation).

Information provision

Respondents with specific questions would like to be able to contact a number of actors such as the general practitioner, treating physician/medical specialist, municipal public health service, or find reliable information on websites of the RIVM (National Institute for Public Health and the Environment), the EMA (European Medicines Agency) or the relevant Dutch counterpart. In addition, various suggestions were made for providing information such as including a

(medical) information leaflet with the invitation, letters for specific risk groups, and visual information for people with limited reading ability. Providing information with the invitation letter was the most popular suggestion by far.

Vaccination requirement or granting privileges to people who are vaccinated

Both a vaccination requirement and the granting of privileges such as access to airplanes and theatres (with a vaccination passport) were mentioned as encouraging reasons to get vaccinated. However, when respondents were asked specifically about this option, many of the interviewees* were against granting extra freedoms to people who had been vaccinated. Even the mere suggestion of doing this triggered a strong sense of opposition in various interviewees. The explanation for this was that many interviewees saw it as an unfair way of putting pressure on people and influencing their freedom of choice. Many interviewees also expected that an action of this sort would lead to tension in society, as it would create a division between those who had been vaccinated and those who had not. According to a few interviewees, it would also motivate people to jump the queue for vaccinations or falsify vaccination passports.

** Please note that the respondents interviewed here were selected from people who had previously indicated that they had doubts concerning the coronavirus vaccination, and that people who were willing to be vaccinated would be likely to respond differently with regard to the above issue. Nevertheless, the strong reactions are an indication that the topic is a sensitive one.*

View of the future of the vaccination campaign

Support for vaccinating the entire population

Almost three quarters of the interviewees thought that it was necessary to vaccinate the rest of the population after vaccinating vulnerable people and healthcare workers. A few of them explicitly mentioned the term 'herd immunity' in that context. In addition, interviewees suggested that the healthy population also contains people who are vulnerable and that people whose profession puts them in contact with the public, including teachers, definitely needed to be vaccinated. Additionally, a high level of vaccination coverage is seen as a precondition for restoring freedoms, reducing the pressure on the healthcare system and ending the crisis.

Interviewees who did not think it necessary to vaccinate the healthy population referred to considerations related to risk perception. For example, mild opponents wondered why healthy people needed a vaccine if they are expected to be relatively mildly affected by an infection or not infected at all. Fervent opponents think that the vaccine will do more harm than good for healthy people, that becoming sick results in better immunity, or that vaccines are in any case not effective.

"I think that, if healthy young people come down with coronavirus, few of them will develop complications or become seriously ill, and it will go away by itself, which provides better immunity than vaccination."

Interplay between vaccination and behavioural measures; basic measures still needed in this phase

Almost all interviewees indicated that, for the time being, it was still necessary to continue behaving in accordance with the coronavirus measures. The primary reasons given for this were that it was necessary to wait until the vaccination coverage was high enough and/or until an effect became visible in the infection numbers.

"That still remains necessary. That has now become common practice and should not be suddenly discontinued. Only after everyone has been vaccinated can we look at the effect and whether you can discontinue the measures. Otherwise, it will be impossible to convince people that it is again necessary."

In addition, a few respondents suggested that relaxing the measures depended not only on the level of vaccination coverage but also, for example, on a reduction in the pressure put on the healthcare system or on a rise in temperature when spring came.

Although there was wide support for continuing the measures, not everyone found this a pleasant prospect. Some interviewees made it clear that they did not like the idea of keeping the measures in place, whereas others indicated an acceptance of the situation. There was also a group of interviewees who thought extending the measures was simply okay. This seemed to be due to the fact that they did not experience the measures as a burden, or they indicated that they had got into the habit of following them. Interviewees indicated that the limitation on social and physical contact was the most difficult measure.

"Those basic guidelines are not so bad. But what bothers me most are the additional rules, such as receiving a maximum of 2 visitors at home; that is what I would like to see relaxed. I am used to no longer shaking hands, just as I am to the 1.5 m rule. The limitation on parties is also hard. Before the lockdown, you were still allowed to gather with 30 people. If we were to go back to that, then it would make a difference. In May, I will be celebrating my 25th birthday, and I would like to throw a party then. Now it's still one big question mark. I also think that if you give people some hope, for example, that certain things would be allowed again on 1 April if the numbers didn't increase, then that would help. That gives you some hope. Now you simply don't know when it will be possible. It looks hopeless, and that makes it so difficult."*

** This was said at a time when people could receive 2 visitors at home.*

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Appendix 1: Analysis of reasons given for getting vaccinated or not, provided as open-ended answers to the behavioural cohort survey Round 8 (11-15 November 2020)

Method

In the cohort survey Round 8, participants could select a number of options in response to the question: *'Would he or she choose to be vaccinated if a vaccine against coronavirus was to be available soon.'* The available options were: *'yes, because...'*, *'yes, but I would first like to know whether I have already had coronavirus'*, *'no, because I have already had coronavirus'*, *'I do not know yet'*, or *'no, because...'*. Respondents who selected the first or the last option could write down reasons for their selection in a blank text field. There were 2,292 open-ended responses given by participants in the *'no, because...'* category, and 2,393 open-ended responses given by participants in the *'yes, because...'* category. The main results are summarised below.

Results

Wanting to get vaccinated to protect oneself and others

The most frequently mentioned reason for getting vaccinated was to protect oneself, one's family and close friends, and/or (vulnerable) others. It provides a feeling of safety. In this context, specific mention was sometimes made of the fact that the person was at risk or had a certain profession which involved seeing many or vulnerable people.

Some of the people who did want to get vaccinated said that they had weighed-up the risk of getting vaccinated against the risk of becoming infected with COVID-19. Vaccination seemed the better option to them ("better safe than sorry", "otherwise you could get very sick"). Some also indicated that they wanted to get vaccinated for fear of becoming sick ("I'm afraid outside", "I'm afraid of becoming sick"), or that others should be given preference ("others need it more").

Wanting to get vaccinated to fight the pandemic

A striking aspect is that people often said they wanted to get vaccinated in order to fight the pandemic ("slowing the virus, combating the pandemic"), or people saw vaccination as the right thing to do ("important", "moral obligation"). Vaccination was also mentioned as a way of being able to roll back COVID-19 safety measures.

Not wanting to get vaccinated because of possible side-effects resulting from rapid development

Amongst the most frequent reasons given to not get vaccinated were that the vaccines were developed very quickly and not tested properly ("I think it went too fast", "brought to market much too quickly"). There were concerns about possible side- and other effects in the short and long term ("I first want to know if there really are no side-effects", "we don't yet know what effect it has on pregnancy") as well as the safety and reliability of the vaccines ("I don't trust it"). People said that they did not "want to be a guinea pig" or that they preferred to wait a bit longer until more is known. In addition, there was a group of people who indicated that they did not want to get vaccinated as a matter of conviction ("I'm against vaccination", "no vaccine in my body").

Not wanting to get vaccinated because of the small risk of becoming sick

Amongst those indicating they did not want to get vaccinated, some also reporting trading off the cost and benefit of vaccinating and getting sick with COVID-19 – in direct opposition to the previous sentiment – they decided that the latter was less dangerous (“coronavirus is not dangerous”, “I’m not afraid of coronavirus”, “coronavirus is preferable to vaccination”), or that the risk of becoming sick was small (“the likelihood that I will become sick is small”).

One’s own poor health can be a reason for wanting to get vaccinated or not

Underlying conditions were also mentioned as a reason for not wanting to get vaccinated (“65+ years”, “I’m vulnerable”, “I have other conditions”). In the group of people who did not want to get vaccinated, some indicated that they did not wish to do so based on their physical condition (“allergies”, “I always get sick from vaccinations”).