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World Pandemic Research Network

Memorandum 13

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COVID-19 Vaccination Resistance

People who are reluctant to vaccinate have often been portrayed as conspiracists in the media. Is this anecdotal evidence ? A stable correlation? Research in humanities and social sciences has looked into this question. It has also studied how people relate to COVID-19 vaccination: do undecided people change their minds over time? What policies are likely to drive them away from vaccination? Is the obligation to show a vaccination certificate to access public spaces effective to nudge vaccine uptake? What makes vaccine mistrust fade away?

Various studies on the World Pandemic Research Network (WPRN) platform provide some initial insights. Here is an overview.

By Aurélie Louchart for WPRN, with the support of the Paris Institute for Advanced Study and the RFIEA Foundation.
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Conspiracy mentality correlated with anti-vaccine positions

Several studies in the WPRN database examine the connexion between conspiracy beliefs and vaccine rejection. All of them confirm that adherence to conspiracy theories reduces the intention to vaccinate. Conducted notably in France, Cameroon and Serbia, these studies confirm a correlation established by previous research in the context of the COVID-19 pandemic.

When conspiracies have no connection with the vaccine...

A conspiracy theory about the virus's origin should not necessarily affect vaccination intention. If one believes that the Chinese government created the virus, one may think it is dangerous and want to protect oneself with a vaccine. Yet the Serbia and France studies highlight that even when conspiracy beliefs are unrelated to the vaccine, reluctance to be vaccinated against COVID-19 increases. In the French survey, none of the conspiracies studied referred to vaccines' dangers: «The French government is using the pandemic to implement far-reaching changes under the radar»; «Corporations will use the pandemic to justify higher prices and make profits»; «COVID-19 is a bacteriological weapon used by the Chinese Communist Party to create panic in the West», etc. The more respondents believed in these conspiracies, the less likely they were to have a positive attitude toward vaccination. Previous studies found that adherence to «classic» conspiracy beliefs unrelated to vaccination (JFK assassination, moon landing, etc.) was associated with negative attitudes toward vaccines. According to the researchers from the University of Belgrade, a conspiratorial mindset, i.e., a propensity to subscribe to theories that attribute responsibility for societal phenomena to malicious actors, may lead to the belief that crucial information is systematically hidden from the general public and excluded from the official discourse (origin of the pandemic, harmfulness of vaccination, etc.)

Local specificities: the case of Cameroon

While the link between conspiracy beliefs and refusal to get vaccinated against COVID-19 is found in many nations, the evoked conspiracies sometimes have local particularities. For example, in Cameroon, theories are about plots by foreign (mainly Western) forces to harm the population. Two narratives predominate: the testing of vaccines on Cameroonians and the attempt to exterminate them by injecting the vaccine. This is said to be done with the complicity of corrupt local elites - misinformation about acts of corruption is prevalent and hard to detect because of the high level of actual corruption in the country. Another specificity is that information not controlled by the authorities is rare in Cameroon, so «fake news» is seen as a manifestation of freedom of expression. A right to an alternative truth is claimed by anti-vax groups (evangelical churches and alternative medicine advocates).

Correlation or causality?

In some cases, an initial distrust of vaccination for non-conspiratorial reasons (religious, for example) could lead to believing in conspiracy theories to legitimize this preexisting point of view. This reverse pathway, whose hypothesis is underlined by the University de la Côte d'Azur researchers, does not seem to be common.

The majority of reluctant people are concerned about vaccine safety

Indeed, research conducted by the University of Southern California tells us that only 6% of people who are reluctant to be vaccinated against COVID-19 have this inclination because of antivax positions. What is the main reason explaining vaccine hesitation? Doubts about the safety of the vaccine. Half of the respondents who were reluctant to be vaccinated indicated that they were concerned that the COVID-19 vaccine was not safe (40% of «maybes,» 68% of refusals). This U.S. population-based study also observes that other reasons for distrusting or rejecting the vaccine vary by group: fear that the vaccine is too expensive for 24% of racialized respondents and 16% of whites; carelessness about SARS-Cov-2 among 27% of white respondents versus 14% of racialized people.

Inform without persuading

To avoid damaging already shaken trust, research conducted by Ghent University on 200,000 people recommends transparent communication about vaccines' efficacy and potential side effects (titled «Motivation Barometer,» it can be found on WPRN). Another German-Dutch research tells us that those who perceive communication about a vaccine as clear and consistent show both greater trust in institutions and higher vaccination intentions. It also points out that transparent information about the limitations of vaccines does not reduce vaccination intentions. Conversely, exaggerating the risk of COVID-19 in vaccination communication undermines the credibility of scientific experts, which in turn predicts a lower acceptance of primo-vaccination and potential boosters.

The «fact box,» an ethical information tool

German and Dutch researchers have developed a communication tool respecting all these recommendations. Using the Harding Center's guidelines on transparent risk communication, these scientists have designed a «fact box» dedicated to COVID-19 vaccination. Available on WPRN, this easily understandable fact box presents available data on the potential benefits and harms of vaccination in a graphically appealing format. Studying this type of information box for 90 seconds would increase the likelihood of changing one's mind about the vaccine by 1.3. However, that is not the purpose of this tool. Not to violate the ethics of health care decision-making, it is designed to inform without attempting to persuade (marketing) or seduce (nudging). Its ultimate goal is to enable informed decision-making while respecting the rights of undecided and skeptical citizens.

What antagonizes the undecided

The Motivation Barometer shows that ethical communication is beneficial in many ways. After interacting with a health worker in an empowering style, respondents report that they will think more about vaccination and show a greater willingness to be vaccinated. Conversely, coercive communication hurts message consideration and intention to vaccinate. The research indicates that vaccine-averse people must not perceive vaccination as an infringement on their autonomy and that if a government introduces mandatory vaccination, timing is crucial. In the proper context, compulsory vaccination can be seen by the undecided as a fair way to mute their doubts and preferences and to contribute to a collective goal of protecting each other and regaining collective freedom. Numbers presented in this July 2021 report indicate that this requirement would be premature at this point. Researchers recommend not stigmatizing the unvaccinated to maintain social harmony. Their findings also advocate for continuing to invest in other strategies to increase support for vaccination: presenting it as an act of solidarity, encouraging people to have a specific person in mind for whom they get vaccinated, specifying vaccination goals to be achieved before easing restrictions, etc.

A health pass to encourage COVID-19 vaccination?

On the contrary, the use of material rewards (gifts, tax breaks, vaccination passports with privileges, etc.) undermines the value of the social incentive. Further, it alienates vaccine skeptics, as it is perceived as pressure. However, this effect does not seem to appear if a negative PCR test is presented as a genuinely equivalent alternative to vaccination and if it is said in the same message. The barometer findings also underline the importance of linking the use of a health pass to COVID alert thresholds. On the one hand, this emphasizes the temporary nature of the measure: if the numbers improve, the pass will be removed. On the other hand, thresholds show that this is a tool to avoid overloading hospitals and ensure the population's health, not to restrict freedom or convince reluctant people to get vaccinated.

Give the undecided some time

Another report from the Motivation Barometer tells us that giving people time to think about vaccination is a tool that should not be neglected. Over time, most of those hesitant become pro-vaccination: 79% of Belgians who had doubts about vaccination in April 2021 were vaccinated by June 2021. And over the months, almost none of the undecideds developed a negative attitude towards vaccination.

How to reduce the impact of conspiracy beliefs?

As for vaccine-hesitant who also believe in conspiracy theories, the research conducted at the Université de la Côte d'Azur points out that exposure to anti-conspiracy arguments before and after exposure to conspiracy theories can restore vaccination intention. It also points to previous research that found that pre-existing knowledge about the HPV vaccine negated the impact of exposure to anti-vax conspiracy theories on vaccination intentions. Proactive outreach initiatives before the public is exposed to misinformation are therefore relevant. The Cameroon research also recommends building the capacity to identify conspiracy theories (media literacy education in schools and on television), valuing local scientific knowledge, and promoting «truth-telling» among politicians: informing citizens about uncertainty, financial or scientific challenges, and publicly admitting shortcomings.

A wealth of research

Many other vaccines and pandemic related issues are investigated by research referenced on the WPRN platform: Astra Zeneca's vaccine side effects impact on vaccination intentions (none in the UK, but a drop in vaccination intentions in Germany, France, Spain and Italy), the fact that a vote in favor of Brexit does not predict a specific stance on vaccination, or that in the US, more frequent social media consumption seems to increase reluctance to get vaccinated... One can also find in the WPRN database a tracker of the global development of treatments and vaccines for COVID-19 by Stanford University, or an algorithm developed by Duke University to rationally allocate vaccines (its efficiency is 30 to 80% higher than the scenario where vaccines are randomly distributed). Research on the ethics surrounding the vaccine is also prominent, with, for example, research questioning legal regulation and intellectual property issues or the deliberate infection of volunteers with COVID-19 for research.

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Appendix

This memorandum is based on resources from the World Pandemic Research Network

>Daniel Allington, Siobhan McAndrew, "Conspiracism, anti-vaccination attitudes and hesitancy regarding a future COVID-19 vaccine"
https://wprn.org/item/477652
A qualitative survey on the effect of social media consumption on perceptions of the seriousness of the pandemic, conspiracism, and intentions towards a future vaccine. It was conducted by King's College London and the University of Bristol on a panel of 2,800 British and American respondents.

>Paul Bertin, "Predicting and correcting the influence of COVID-19 and pro-chloroquine conspiracy theories on COVID-19 vaccination intentions"
https://wprn.org/item/410052
This research conducted by the Université de la Côte d'Azur explored whether conspiracy theories about COVID-19 and pro-chloroquine theories could influence vaccination intention. In a forthcoming part of the study, it will experimentally test two means to reduce beliefs in these conspiracy theories to restore vaccination intention.

>David Comerford, "Repeated cross-section tracking UK vaccine hesitancy in response to news on risks"
https://wprn.org/item/521852
This cross-sectional survey by researchers at the University of Stirling examines the vaccination intentions of a representative sample of UK residents before and after several countries suspended the use of the AstraZeneca vaccine (due to blood clot deaths). Their data shows no decrease in vaccination intentions in the UK.

>Mark Findlay "COVID-19 Vaccine Research, Development, Regulation and Access"
https://wprn.org/item/483352
This brief review conducted at Singapore Management University looks at the COVID-19 vaccine through the lens of intellectual property regimes. Will substantial intellectual property rights be to blame if access to the vaccine is restricted?

>Aram Grigoryan, «Effective, Fair and Equitable Pandemic Rationing"
https://wprn.org/item/400752
Duke University offers algorithms that optimize vaccine allocation to make it as fair, equitable, and efficient as possible. Simulations show that the efficiency gains from optimization are substantial. It answers the question «who gets what vaccine?» and not just «who gets a vaccine?»

>Nicolas Duquette,"Heard immunity: effective persuasion for a future COVID-19 vaccine"
https://wprn.org/item/489852
The University of Southern California survey found that vaccination intentions varied widely by ethnicity: 75% of Asian, 54.5% of white, 52% of mixed race, and 48% of Latino respondents expressed an intention to vaccinate, compared to only 25% of black and 19% of American Indian respondents. Among respondents other than white, the intention to vaccinate is over 50% higher when the message emphasizes protecting others (rather than oneself).

>Felix Rebitschek, Mirjam Jenny, Christoph Wilhelm & Al., "HC-RKI Fact Boxes"
https://wprn.org/item/528452
Applying the Harding Center's research on transparent risk communication, these researchers from the University of Potsdam, the Robert Koch Institute, and the Max Planck Institute created fact boxes on the potential benefits and harms of mRNA-based vaccines against COVID-19.

>Adair Richards, "Ethical Guidelines for Deliberately Infecting Volunteers with COVID-19"
https://wprn.org/item/438952
This article explores the ethical dimensions of human trials in developing vaccines or treatments for COVID-19. It discusses five potential objections: the risk of harm to participants, the risk that the research does not result in a usable vaccine, that it may be impossible for a person to truly give free and informed consent, the fact that such experiments may damage the reputation of research, and that such experiments may be the start of a slippery slope.

>Mahama Tawat, "Fake News and the COVID-19 Pandemic. A Study of Practices and Sociopolitical Implications in Cameroon"
https://wprn.org/item/512852
Using Cameroon as a case study, this article from the University of Montpellier examines «fake news» and its micro and macro socio-political implications for the vaccination campaign. Policy recommendations on the scientific, communication, and socio-political levels are provided.

>Joachim Waterschoot, Maarten Vansteenkiste, Sofie Morbée, "The Motivation barometer"
https://wprn.org/item/528752
The «Motivation Barometer» is a large-scale study monitoring the Belgian population's motivation to adhere to anti-covid measures and their psychological well-being. Data has been collected from over 200,000 participants in the Flemish and Wallonian regions, with more than one year of daily and weekly measurements. Scientific articles and reports are published regularly based on the results. The project is conducted by the Developmental Psychology Research Group of Ghent University.

>Jack Zeng, Jason Pham, Jia Liu & Al. "Curated web tracker of global development of treatments and vaccines for COVID-19"
https://wprn.org/item/408452
Stanford University provides a tracker of COVID-19 treatments and vaccines in development. It gives progressive levels (raw clinical trials, drug and vaccine leads...) that can help decision-makers coordinate their efforts. Data come from clinicaltrials.gov, pubmed.gov, and drugbank.ca, among others. As of September 2021, it lists 331 treatments in clinical trials, 62 vaccines in clinical trials, and 5 FDA-approved vaccines.

>Iris Zezelj, «Irrational beliefs differentially predict adherence to guidelines and pseudoscientific practices during the COVID-19 pandemic»
https://wprn.org/item/441452
Researchers from the University of Belgrade examine whether irrational beliefs (conspiracy theory, overestimation of COVID-19 knowledge, type I cognitive error bias, and cognitive intuition) predict adherence to anti-COVID-19 measures, and pseudoscientific practices, and vaccine intention. Another Serbian study on this topic is also available on WPRN: Jasna Milosevic Dordevic, «Links between conspiracy beliefs, vaccine knowledge, and trust: Anti-vaccine behavior of Serbian adults» https://wprn.org/item/535152.