



INCREASE Corona Workshop Series: Knowledge Exchange in Virtual Workshops on the SARS-CoV-2 Pandemic

INCREASE Corona Workshop No.3

Risk Communication during the COVID-19 pandemic in Iran and Germany

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Cover image: Tochal, Tehran, Iran in 2019 by Mehrdad Rajabi (edited by Vicente Sandoval)

Preface

In its conception, the INCREASE-project proposed a series of virtual workshops devoted to discussing about ongoing developments of the COVID-19 pandemic with a special focus on relevant aspects for the context of Integrated Disaster Risk Management (IDRM) in Iran and Germany. These two-hour workshops bring together experts from both countries and aim to develop a corresponding network of specialists.

The topic and scope of each workshop depend largely on the ongoing development of the COVID-19 pandemic in each country and of the interests among participants. For updated information about the workshops, please visit https://www.increase-project.com/corona-workshop-series/

The workshop took place on **23 May 2022** online and this summary finished in 2023 provides key insights on the conversational course, presentations and discussion offered by speakers and participants.

Risk Communication during the COVID-19 pandemic in Iran and Germany

The first workshop, that took place on 30 August 2021, addressed introductory questions regarding the COVID-19 pandemic in Iran and Germany, as an initial step to approach in the subsequent workshops more specific questions regarding to the social aspects of vaccination, role of volunteerism, multi-hazard risks and preparedness. The second workshop took place on 21 February 2021 (online), it introduced about different social dimensions of and experiences on vaccination against COVID-19 in Iran and Germany.

In this third workshop, the keynote speakers Dr. Atefeh Vaezi (Isfahan University of Medical Sciences) and Dr. Annett Schulze (German Federal Institute for Risk Assessment BfR) shared some experiences and discuss approaches around risk communication during the COVID-19 pandemic as well as experiences in Iran and Germany. As in the previous workshop, the conversation was moderated by Dr. Vicente Sandoval (FU-Berlin), and Dr. Farnaz Arefian (University College London & Silk Cities) participated as discussant. Following are the key insights obtained from the course of conversation and discussion.

COVID-19 Communication: Research on multimodality, disinformation, factchecking, and health literacy in Germany

During the beginning of the COVID-19 pandemic in Germany, there was clear that there were several challenges in science communication about the risks of the virus. One the first thing done during the pandemic by the German Federal Institute for Risk Assessment (BfR) was to look at the idea of fact-checking and dis-information. 'Dis-information' is understood here as all kind of information that is false and deliberately created to harm a person, social group, organisation or country. Likewise, 'misinformation' refers to all information that is false, but not created with the intention of causing harm, while 'mal-information' is all kind of information that is based on reality, used to inflict harm on a person, organisation or country (Wardle, & Derakshan, 2017) –see Figure 1.



Figure 1. Information disorder (Wardle, & Derakshan, 2017)

In the process of learning from dis- and misinformation, there were also the necessity of figuring out what alternatives exists (from research) to fight back such misleading information. The following Table I summarises key features of misinformation and its psychological mechanisms, as well as key potential corrections and their recommendations of usage. This knowledge and approach were combined with in-house analyses to develop different strategies and outputs of risk communication in Germany.

Key features: misinformation	Psychological mechanisms	Key features: corrections	Recommendations on corrections
Negative balance	Negativity bias	Neutrality	Captive and emotional
Provision of simple explanations of complex phenomena	Preference for complete albeit faulty mental models	Sober and complex explanation of complex	Narrative format and easy-to-understand
	Transportation	phenomena	language
Use of visual "evidence" for the claims made	Seeing is believing		Explanations supported with still or moving images
	Realism heuristic	- Text-based -	
	Truthiness effect		
Viral distribution in social media	Illusory truth effect	Distribution in highbrow channels	Distribution in the same channels as the misinformation to be corrected in addition to expert sources
Compatibility with the values and norms of the audience	Motivated reasoning	lacking references to widespread values and	Addressing values and norms + include self- affirming elements
	Confirmation bias	norms	

Table 1. Learning from dis- and misinformation, based on Dan (2021)

In relation to research on risk communication during the COVID-19 pandemic at the BfR, some studies looked at perceived effectiveness of preventing measures against COVID-19. For instance, BfR developed a platform named 'BfR Corona Monitor'. The BfR Corona Monitor is an ongoing survey that captures the public's perception of the risk posed by the novel coronavirus in Germany. Since March 24, 2020, a random sample of individuals has been regularly interviewed by phone to gather their views on the risk of infection and the precautionary measures they have implemented.¹ Another example is the project Multimodality in Risk and Crisis Communication (MIRKKOMM) funded by the German Federal Ministry of Education and Research (BMBF) until 2024. MIRKKOMM focuses on multimodality in risk and crisis communication and analyses the internal and external knowledge management of public health institutions under the conditions of the pandemic in Germany. One of these aims is to analyse the benefits of multimodal risk and crisis communication for public health institutions both from the point of view of communicators (authorities and media) and from the point of view of recipients. The combination of these perspectives has enabled specific observations about what effects information, public statements, warnings, and recommendations from public institutions and their effects on perception and intentions for action, depending on the form of presentation.²

The term 'multimodality' in risk and crisis communication refers to the utilisation of various presentation modes, such as graphics, icons, statistical visualisations, texts, sound, animations, etc., to convey specific content. Typically, risk and crisis communications involve a complex interplay of these diverse modes or elements. Thus,

I. More and updated information can be found here: https://www.bfr. bund.de/en/bfr_corona_ monitor-244792.html

2. More information here: https://mirkkomm.de

'multimodality' describes the specific arrangement of these different communication modes, and examining multimodality enables a comprehensive understanding of the significance of individual modes and their collective meaning within the arrangement.

The SARS-CoV-2 pandemic confronted governmental agencies as well as civil society with dynamic decision-making situations. People were following developments using different types of media and formats to make sense of the current crisis. Quality media such as public service broadcasting used figures from universities or national and international health organizations in their reporting. The (epidemiological) findings and forecasts on the spread of the virus were increasingly presented in so-called dashboards, i.e. through a specific type of visualization "of a consolidated set of data for a certain purpose", using a combination of numerical, temporal, geographical and diagrammatic forms of presentation. Public institutions such as the Robert Koch Institute (RKI) uses dashboards to represent statistical data in a way that can be used and spread by other institutions, media, and individuals (see Figure 2). The BfR conducted a study to investigate the visualisation of complex data sets and the ways in which dashboards are used (Schulze et al., 2023). The systematic review reveals that studies that do not limit themselves to describing the construction of a specific dashboard, but also evaluate its content in terms of different risk communication models or constructs (e.g. risk perception or health literacy) are even rarer. Furthermore, some of the studies are limited at best to the evaluation of usability and corresponding metrics from the perspective of potential users, but often only to a purely functionalistic evaluation of the dashboard by the respective development teams. These results suggest that despite their frequent use, the value of dashboards for risk communication purposes still needs to be assessed further. Applied research on risk communication tools like dashboards would benefit a) from including risk communication models and constructs as well as different disciplinary perspectives (e.g., IT, communication studies, psychology) and b) a more inclusive approach that involves potential target users throughout the construction and design process. For this, a pre-design consideration of risk information needs that potential target groups might have is essential.



Figure 2. Screenshot of COVID-19 Germany Dashboard, Robert Koch-Institut (2021)

Infodemic and risk communication in Iran

Self-care is one of the main prevention strategies, however, effective self-care needs clear and in-time information. In the case of Isfahan Province, in Iran, some questions raised: What to do with false information? how to communicate Risk?

Risk communication is a two-way, dynamic art-science process that aims to bridge the gap between what we think people should know and what they want to know. It is not a one-time event, but rather a lifetime process that should evolve as the outbreak or crisis develops.

One key aspect of effective risk communication is establishing trust with the audience before any crisis occurs. Trust-based communication builds a foundation of credibility and reliability, which can help minimize fear and panic during uncertain situations. Trust is built by consistently providing accurate information, being transparent about uncertainties, and engaging in open dialogue with the public. Likewise, the process of risk communication should be adaptable and flexible, evolving as the outbreak or crisis progresses. As new information becomes available or the situation changes, it is important to update and revise communication strategies accordingly. This ensures that the public receives timely and relevant information, and helps in mitigating the spread of misinformation.

Furthermore, risk communication should aim to minimize fear by making uncertainties as clear as possible. Acknowledging uncertainties, explaining the limitations of the information available, and providing context can help prevent misconceptions and manage expectations. This helps the public to better understand the situation and make informed decisions.

Effective risk communication involves several key elements. Firstly, it is important to be honest and clear about what is known and what is not known. Transparency is essential in building trust with the audience, and trust is a key factor in effective risk communication. Communicating accurate and reliable information helps to establish credibility and fosters trust between communicators and the community. Secondly, it is crucial to listen to the community when addressing their fears and perceptions. Listening to the concerns, questions, and feedback from the community helps in understanding their perspectives and tailoring communication messages accordingly. This demonstrates empathy and respect for their emotions and concerns, and allows for better engagement and communication with the community. Lastly, managing rumours and infodemic as quickly as possible is critical in effective risk communication. Rumours and misinformation can spread rapidly during crises or outbreaks, leading to panic and confusion. Addressing and debunking rumours in a timely manner, and providing accurate information to counteract misinformation, helps in minimizing the impact of infodemic and prevents the spread of false information (see Figure 3).

The COVID-19 pandemic has presented unique challenges in risk communication in Iran and elsewhere, as it produced also 'the first global infodemic'. In the era of social media, information, both true and false, spreads rapidly, making it difficult to find accurate solutions. This has created an environment of amplified uncertainty, risk-taking behaviour, and mistrust in health officials. Addressing these challenges requires effective risk communication strategies that prioritize transparency, accurate information, and timely debunking of misinformation to build trust, mitigate the spread of false information, and foster informed decision-making among the public.

The COVID-19 pandemic has ushered in a new era of information dissemination where any individual could become a news network. Social media platforms like the Shahrbanoo News Network (SNN) in Iran allow users to share opinions, personal experiences, and perspectives with unprecedented speed and reach. Unlike previous pandemics, there is greater access to the internet, and people now rely heavily on social media instead of traditional channels for information. The lockdown measures have further amplified people's reliance on social media as they spend more time online. This presents both opportunities and challenges in risk communication, as information can spread rapidly, but also misinformation can be disseminated widely. By utilizing these channels strategically, risk communicators can harness the power of social media to promote accurate information, build trust, and mitigate the spread of misinformation during the ongoing COVID-19 pandemic.



A content analysis revealed that social media platforms are responsible for disseminating half of the identifiable misinformation, highlighting the significant role they play in amplifying fake news. Modelling studies have shown that even a modest reduction in harmful advice circulating online or a decrease in the dissemination of fake news by just 20% of the population could lead to a decrease in the severity of disease outbreaks. The scale of the problem is evident in the sheer volume of misleading information being shared. For instance, in March 2020, there were an average of 46,000 new posts on Twitter per day linked to misleading information about the pandemic (Cummings, et al., 2020). According to a study by Ofcom (2023), 46% of UK adults reported being exposed to misleading information online about the crisis, with 40% finding it challenging to discern what is true or false about the virus.

Effective risk communication during the pandemic requires concerted efforts to counter misinformation, promote accurate information, and enhance media literacy among the public. Trusted sources, fact-checking organizations, and proactive measures by social media platforms to detect and remove false information can play a pivotal role in mitigating the spread of misinformation. Ensuring that accurate information is readily available and accessible, and empowering individuals to critically evaluate the information they encounter online, is crucial in minimizing the harmful effects of the infodemic and promoting evidence-based risk communication during the COVID-19 pandemic.

In the case of Isfahan Province, authorities found that the study by Wardle and Derakhshan (2017) was adequate to classify type of mis- and dis-information (see Table 2).

Туре	Explanation
Misleading content	Misleading use of information to frame an issue or individual
Satire or parody	No intention to cause harm but potential to fool
Fabricated content	News content is 100% false, designed to deceive and do harm
Imposter content	When genuine sources are impersonated
Manipulated content	When genuine information or imagery is manipulated to deceive
False context	When genuine content is shared with false contextual information
False connection	When headlines, visuals or captions don't support the content

Table 2. Type of mis- and dis-information, Wardle and Derakhshan (2017)

Likewise, other studies were found relevant to consider risk communication strategies during the infodemic in the Isfahan Province. For example, the study by Zhang et al. (2021) revealed that he daily number of social media posts related to the COVID-19 infodemic is positively correlated with the daily number of newly confirmed and newly suspected COVID-19 cases.

Other study conducted by Bapaye and Bapaye (2021) revealed that certain demographic and occupational factors were associated with higher vulnerability to misinformation during the COVID-19 pandemic. Users aged over 65 years were found to have the highest vulnerability to misinformation, indicating that older adults may be more susceptible to false information related to the pandemic. Furthermore, the vulnerability to misinformation was significantly higher among users employed in elementary occupations compared to professionals. This suggests that individuals in lower-skilled occupations may be more susceptible to misinformation, possibly due to differences in information-seeking behaviours or levels of digital literacy. Interestingly, the study also found that false messages with an attached link and/or source were marked as true six times more often than false messages without any attached link or source. This highlights the potential influence of perceived credibility from external sources, even if the information itself is false. These findings underscore the importance of understanding the demographic and occupational factors that may contribute to vulnerability to misinformation during a public health crisis such as the COVID-19 pandemic. It highlights the need for targeted interventions, including tailored educational efforts, fact-checking initiatives, and critical thinking skills development.

Another study conducted by Apuke and Omar (2020) explored the predictors of fake news sharing on social media. The findings revealed several factors that were associated with the likelihood of sharing fake news. One of the strongest predictors of fake news sharing was 'altruism', suggesting that individuals may share fake news with the intention of helping others or promoting a cause they believe in. Additionally, 'information sharing' and 'information seeking' behaviours were also identified as predictors of fake news sharing, indicating that individuals may share fake news as a way to disseminate information or seek validation for their beliefs. Likewise, 'socialization', 'pass time', and 'entertainment' were also identified as predictors of fake news sharing, suggesting that some individuals may share fake news as a form of social interaction, to pass time, or for entertainment purposes.

Understanding these predictors can help in developing effective strategies to combat the spread of fake news on social media platforms, including targeted interventions that address the underlying motivations and behaviours associated with fake news sharing.

Upcoming workshops

In the coming months, there are further workshops of the series that aim to deepen on different aspects of the COVID-19 pandemic in Iran and Germany. Dates and details about these workshops will be announced soon.

No.	Title	Description	Dates
1 Int CC Ge	Introductory conversation on the COVID-19 situation in Iran and Germany: National health and	National health and emergency systems, and national strategies on COVID-19 in Germany and Iran.	30 August 2021
	emergency systems	Read about the event here: https:// www.increase-project.com/1st-corona- workshop/	
2	Social aspects of vaccination against COVID-19	Vaccination hesitancy (differences between Iran and Germany). Ethics issues, and knowledge and reactions from different social groups.	21 February 2022
		Read about the event here: https://www. increase-project.com/2nd-corona- workshop/	
3	Risk communication	How to mobilise people under different cultural framing. Practical approaches/ solutions.	23 May 2022
4	Logistics of civil protection in the pandemic in Iran and Germany	Civil protection, logistics, and volunteerism during the pandemic: Preparedness, response, and relief.	01 November 2022 (cancelled)
5	Lesson learnt from social aspects of the COVID-19 pandemic	Reflections from social aspects of the COVID-19: management, vaccination strategies, and decision-making during the pandemic in Iran and Germany.	ТВС

Speakers

Dr. Atefeh Vaezi

Dr. Vaezi is an assistant professor in Community Medicine, at the Cancer Prevention Research Center, Isfahan University of Medical Sciences. She is an expert in the field of public health, health policy, and response management. Through the pandemic of COVID-19, she established an "evidence-based research response team". They worked to provide evidence for local policymakers and implement some interventions in the approach to infodemic.

Dr. Annett Schulze

Dr. Schulze is Head of Study Centre for Social Science Research, Department Risk Communication, at the Federal Institute for Risk Assessment (BfR). She is an expert in several fields of media and risk communication and part of the BfR pandemic research activities. The BfR is the scientific agency of the Federal Republic of Germany being responsible for preparing expert reports and opinions on food and feed safety as well as on the safety of substances and products. Its work is particularly dedicated to public communication of health risks for consumers, and inter/national expert networking. In its assessments and recommendations BfR is not influenced by any economic, political, or social interests.

Dr. Farnaz Arefian (Discussant)

Dr. Arefian is an expert in disaster management and risk reduction (DRR), urban design and strategic management. She has a background in private sector consultancy and management for delivering large-scale urban development and architectural projects, including participatory post disaster reconstruction. She has first-hand experience in post disaster reconstruction in the city of Bam, Iran, after the disastrous earthquake in 2003. Her PhD research dealt with organisational design and management for post disaster reconstruction programmes. Her current research interests concern disaster risk reduction; urban reconstruction; urban resilience; strategic management and organisational configuration for urban development programmes; and contextual urban challenges in the Middle East and Central Asian cities.

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