Conspiracy Thinking in Times of Crisis: Conspiracy mentality, beliefs and prevention behaviour during the COVID-19 pandemic

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CONSPIRACY MENTALITY, BELIEFS AND PREVENTION BEHAVIOUR DURING THE COVID-19 PANDEMIC

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Abstract

This master thesis aims to contribute to the existing research body on the mechanisms concerning the adherence to prevention measures and conspiracy thinking. COVID-19 in the Netherlands was used as a case study and data was gathered via an online survey. The study looked at COVID-19 conspiracy thinkers in the Netherlands, their individual COVID-19 beliefs, level of conspiracy mentality, and their adherence level to normative (government-recommended) prevention measures.

Adherence to COVID-19 specific conspiracy beliefs was generally low in the study population, however there was a large variation of adherence in the sample. The adherence to a conspiracy mentality in the Netherlands could be considered generally low. The participants self-reported adhering to the normative prevention measures across the board as 'most of the time'. Participants believing in COVID-19 conspiracy beliefs were less likely to adhere to normative prevention measures. A similarly strong relationship was found between the adherence to normative prevention measures and having a conspiracy mentality. Risk perception was found to play a significant role in these relationships. All three aspects of risk perception had a positive impact individually. When considering all aspects together however it was found that personal risk perception and perceived risk of contamination of the general population were the only two aspects of risk perception that still had a positive influence on adherence levels, whilst perceived risk of death simply did not.

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1. Introduction

On 31 December 2019, Chinese officials informed the China Country Office of the World Health Organization (WHO) of several pneumonia cases of unknown cause. Approximately two and a half months later the WHO declared the COVID-19 (coronavirus) outbreak a 'global pandemic'. Another five days later, the Dutch prime minister addressed the country introducing social distancing measures ('intelligent lockdown'). Unlike other crises of a more 'acute' nature, such as natural disasters or terrorist attacks, the COVID-19 pandemic is something experts call a 'creeping crisis' (Boin et al., 2020, p.190). It took several months before the threat these pneumonia cases in China posed became clearer, and furthermore, it took time for countries around the world to formulate policy interventions (Boin et al, 2020, p.190). When looking at the national policy responses across Europe there was clear variety in both severity as well as in timing, though by the end of March 2020 most European countries had either regional or national lockdowns in place, often along with other policy measures regarding travelling and/or free movement within its borders (Toshkov et al., 2020, p.2).

During the COVID-19 global pandemic, policy-makers have been forced to make urgent policy decisions based on little information, without evidence-based roadmaps, which often had implications previously unimaginable in modern society. As governments try to find a balance between effective prevention methods to combat COVID-19 and protect economic as well as social well-being, challenges of transparency, clarity and consistency are prominent in their communication with the public. The dos and don'ts of crisis management and crisis communication are already difficult to navigate, but these tasks get even more difficult when intense prevention measures test the boundaries of solidarity amongst the population (Boin et al, 2020). On top of all this, there is the additional difficulty posed by the spread of misinformation. During a media briefing the WHO Director-General stated the following: *"[…] we're not just battling the virus; we're also battling the trolls and conspiracy theorists that push misinformation and undermine the outbreak response."* (WHO, 2020a, February 8). Indeed, with its high levels of both urgency and uncertainty, the COVID-19 pandemic has been an ideal environment for the creation and development of conspiracy theories (Marinthe et al., 2020).

Conspiracy theories are commonly defined as explanations for events that implicate powerful groups who plot and cover up information to suit their own (often malevolent) interests (Douglas et al., 2017, p.538). As previous research has shown, conspiracy theories

tend to form around significant events, when people feel threatened and uncertain about the state of events (Marinthe et al., 2020, p.958; Freeman et al., 2020, p.2). Furthermore, ambiguous information about the cause(s) of an event gets interpreted by the people as more negative (Abadi et al., 2020, p.4). Certain parts of the population will look for alternative explanations, having rejected official narrative, in order to make sense of things and feel a certain amount of control (Douglas et al, 2017, p.538).

Many scholars would argue the WHO Director-General is right to worry about negative effects on the outbreak response. For previous research has shown, among other things, that prescribing to conspiracy theories is related to a lack of adherence to critical health behaviours, like medication regimes or vaccinations, as well as to increased intensions of engaging in *'non-normative'* political acts, such as violent protests (Abadi et al., 2020, pp.23-24; Bruder et al., 2013, p.2; Freeman et al., 2020, p.12; Imhoff & Lamberty, 2020, p.1111; Stoica & Umbreş, 2020, p.S247). Indeed, having a *'conspiracy mentality'* is strongly linked with distrust in official versions of events, science (experts) in general, and the biomedical sciences in particular (Imhoff & Lamberty, 2020, p.1111). This is of the utmost importance, as plans to combat COVID-19, like 'flattering the curve', rely heavily on people's willingness to adhere to prevention measures stipulated by their medical experts (Freeman et al., 2020, p.12; Kowalski et al., 2020, p.2).

The need for information about mechanisms related to adherence to safety measures during a time of crisis provides a strong incentive for this research. Such information could provide valuable lessons on how to enhance an outbreak response, potentially saving lives and further protecting societal well-being. Looking into conspiracy beliefs specifically is important because, as stated before, they are known to be harmful to outbreak responses. Another reason this type of research is important is that, in the words of Freeman et al. (2020), *'conspiracy beliefs are often both indexes as well as drivers of societal corrosion*' (p.12). Not only is the study of conspiracy beliefs important to help in crisis management, but it provides everyday lessons for societal leaders, e.g. about the public's trust in institutions and experts, as well as about the spreading of misinformation. Indeed, Kowalski, et al. (2020) deem researching the relationship between conspiracy beliefs and adherence to safety measures to be essential due to a growing phenomenon of anti-scientific stances and conspiracy beliefs in media and politics (p.6).

We live in a time where modern technology has irreversibly changed the '*media ecology'*. Through the internet, bounds of information can be spread rapidly and anyone can post anything

for public consumption without having to go through any sort of editorial process (Radboud Reflects, 2020). And whilst the importance of freedom of information is not disputed in academia, the combination of this new media ecology and higher levels of distrust is helping conspiracy beliefs to thrive and misinformation to increasingly spread – which can result in what some people call an '*infodemic'*. Especially in the midst of a pandemic, where misinformation can mean major risks for societal health and well-being, scholars stress the importance of further research with the purpose of learning how to effectively combat misinformation (Freeman et al., 2020; Kowalski et al., 2020).

During the past year some research has been done pertaining to the mechanisms surrounding conspiracy beliefs during the COVID-19 pandemic specifically. Some of the most prominent studies provided comprehensive overviews of the state of affairs in their respective countries. The national studies referred to in this study are Alper et al. (2020) in Turkey, Freeman et al. (2020) in England, Kowalski et al. (2020) in Poland, Marinthe et al. (2020) in France, Stoica & Umbreş (2021) in Romania, and Tonković et al. (2021) in Croatia. In many of their future research recommendations these scholars stress the need for duplication, cross-country comparative studies, and identifying further factors associated with adherence (Freeman et al., 2020, p.12; Kowalski et al., 2020, p.2; Marinthe, et al., 2020, p.971).

In summary, considering the societal value of understanding conspiracy thinking during a global health crisis, it is both of societal importance and academic relevance for further research to attempt to validate previous findings concerning this phenomenon, as well as shed more light on some of the more ambiguous associations between conspiracy thinking and adherence to safety measures (like risk perception). Hence, this master thesis aims to contribute another national overview to the existing research body by providing duplication and further testing of existing theories regarding conspiracy thinking amidst the COVID-19 pandemic in another single-country setting, namely that of the Netherlands. This study focuses on the following research question: *'How does conspiracy thinking explain people's prevention behaviour in the midst of a pandemic?'*, using the COVID-19 in the Netherlands as a case study and using an online survey to gather data. The study goes about this task by looking at COVID-19 conspiracy thinkers in the Netherlands, their individual COVID-19 beliefs, level of conspiracy mentality, and their adherence level to normative (government-recommended) prevention measures. The following sub-questions will be answered:

- *1a. What is the prevalence of COVID-19 specific conspiracy beliefs in the Netherlands?*
- *1b. What is the prevalence of conspiracy mentality in the Netherlands?*
- *2. How prevalent is the adherence to normative prevention measures in the Netherlands?*
- *3a. Does holding specific COVID-19 conspiracy beliefs predict adherence to normative prevention measures?*

  3b. Does conspiracy mentality predict adherence to normative prevention measures?
- *4. Does risk perception moderate the relationship between conspiracy thinking and adherence to normative prevention measures?*

Taken together, this master thesis intends to provide an overview of COVID-19 conspiracy beliefs and mechanisms in play as well as their impact on the national outbreak response by the citizens of the Netherlands.

1.1 Reading Guide

Chapter 2 will provide the reader with a theoretical framework, introducing the relevant concepts and related important findings from existing research as well as looking at said concepts in the context of the case study – the COVID-19 pandemic in the Netherlands. For this study, a theoretical framework is formed which incorporates the concepts of crisis management, conspiracy thinking and conspiracy mentality, as well as includes related characteristics (like risk perception).

Section 2.1 sheds light on the concept of crisis management and how the phenomenon of conspiracy thinking plays into this. Section 2.2 explains the concept of conspiracy thinking further by looking at the motives behind them, introducing the concept of conspiracy mentality as well as the concept of risk perception. Where sections 2.1 and 2.2 convey the larger picture of existing literature regarding conspiracy thinking in relation to crisis management, section 2.3 focuses on the context of the COVID-19 pandemic specifically. Specific COVID-19 conspiracy beliefs are discussed in section 2.3.1. Section 2.3.2 illuminates an important issue for any outbreak response, namely data on adherence to prevention measures. Section 2.3.3 focuses on conspiracy thinking and prevention behaviour in the country of the Netherlands. Finally, section 2.4 will provide a final description of the research aim and its expectations in regard to the research questions.

Subsequently, chapter 3 will provide the study's research design and methodology, provide information on its data collection and following data analysis, and address the study's reliability and validity. Chapter 4 will showcase the findings of our study, which shall subsequently be

discussed in chapter 5. Finally, the concluding chapter 6 will offer a brief summary of the study's findings, provide answers to the research questions and address any limitations and potential avenues of future research.

2. Theoretical Framework

2.1 Crisis Management and the Phenomenon of Conspiracy Thinking

A crisis is *'a serious threat to the basic structures or fundamental values and norms of the social system which—under time pressure and highly uncertain circumstances—necessitates making critical decisions'* (Rosenthal, Charles, and 't Hart, 1989, as cited in Boin, 2004, p.167). Meanwhile, crisis management is widely comprised of all actions by leaders that deal with the prevention and preparation of crises, the crisis responses and communication with the public in times of crisis, as well as the aftermath of a crisis (Boin, 2004; Bundy et al., 2016). Crises are characterised by suddenness, extreme urgency and uncertainty, and the COVID-19 pandemic was no different. Leaders and policy-makers were presented with great challenges to tackle without evidence-based roadmaps; trying to balance economic stability, the implementation of effective crisis management measures, and communicating information to an anxious society is not an easy task, especially since what would be good for the economy, namely loosening restrictions, stands in stark opposition with what would be good for keeping the number of infections low (Boin et al., 2020, p.197). Another attributing factor to the difficulty policy-makers face during this crisis is the fact that the COVID-19 pandemic is very much a 'creeping crisis', meaning it has an undefined ending point (Boin et al., 2020, p.197). Furthermore, creeping crises can last a very long time and conditions and circumstances can change throughout, meaning a national response would have to follow suit.

Communication with the public is always a crucial part of crisis management, as citizens tend to look towards societal leaders for help with the *'meaning making'* process regarding the impacts on society and what comes next (Jong & Dückers, 2019, p.15). It is important for the authorities to present the 'dominant frame' of any crisis, which should explain the crisis, its consequences, as well as the actions being taken to prevent or minimize said consequences (Boin et al., 2013, p.85). Furthermore, leaders must also give explanations as to why certain actions are *not* undertaken, both for the sake of transparency and clarity regarding the governmental response as well as to take away any (further) fuel for alternative interpretations (Boin et al., 2020, p.197).

Crisis management research has shown that if room is left for alternative interpretations by other sources and leaders fail to impose a dominant frame, this can be very harmful to the crisis management process, as well as to the long-term legitimacy of public institutions and experts, which could consequently result in (even more) polarization (Boin et al., 2013, p.85; Boin et al., 2020, p.196). In these instances, feelings of great uncertainty, a sense of

vulnerability, and a lack of control can drive people to find alternative patterns and explanations to make sense of the situation and gain at least some feeling of control (Douglas et al., 2017, p.538; Imhoff & Lamberty, 2020, p.1111).

The phenomenon of '*conspiracy thinking'* often pops up around significant events, like the 9/11 terrorist attacks, the death of Michael Jackson or a pandemic – like the Zika-virus or COVID-19 (Marinthe et al., 2020, p.958). These theories are the sense-making narratives created to explain these events that threaten people's security or that are inconsistent with people's expectations (Freeman et al., 2020, p.2; Van Prooijen & Douglas, 2017, p.324). As stated before, research has shown that conspiracy thinking has been linked to a lack of trust in science in general, and the biomedical sciences in particular (Imhoff & Lamberty, 2020, p.1111; Kowalski et al.; 2020, p.7; Tonković et al., 2020, p.3). Consequently, any recommendations made by experts are more likely to be ignored by people who are prone to conspiracy thinking, which could be one of the ways such 'alternative frames' can be harmful to the crisis management process.

2.2 Conspiracy Thinking

In previous research, a *'conspiracy theory'* has been defined as an explanation for an event or events that implicate powerful groups, who plot and cover-up information to suit their own –often malevolent – interests (Douglas et al., 2017, p.538). Across the body of research on conspiracy theories the exact wording tends to differ, however what all definitions have in common is the belief that the status quo or a particular event is not as it seems, whilst a group of powerful others are behind the cover-up (Freeman et al., 2020; Van Prooijen & Douglas, 2017; Marinthe et al., 2020). Furthermore, the theory tends to only be accepted by a minority and most have no evidence to support them, though throughout history some conspiracy theories have been proven to be true (e.g. Watergate) (Freeman et al., 2020, p.2; Van Prooijen & Douglas, 2017, p.538). Several studies have also shown that people are more likely to credit conspiracy theories when the consequences in question have been more harmful, e.g. when an assassination was successful or when it evoked a subsequent war (Van Prooijen & Douglas, 2017, pp.327-328). This phenomenon, called 'consequence-cause matching' has been attributed to the increased motivation for sense-making (Van Prooijen & Douglas, 2017).

With the introduction of *'new media'*, meaning media which relies on computers to be circulated, we find that the current media-ecology has become a lot more horizontal (Radboud Reflects, 2020). When it comes to *'old media'* outlets - like television, radio and printed media

– each news item is selected and evaluated according to certain journalism guidelines, consequently gatekeeping which news items reach the public and how said news is presented. So-called '*media gatekeepers'* are completely by-passed in most new media outlets, as anyone can post anything on the internet and information can circulate without any editorial process coming into play (Radboud Reflects, 2020; Van Gool & Van de Ven, 2020). It stands to reason that the ease with which conspiracy theories are spread online is part of the reason why some people might feel like conspiracy theories have become a bigger problem in our modern society. The absence of gatekeepers online is in any case a major factor when it comes to the spread of misinformation, and consequently can do serious damage when it comes to a coherent societal response in times of crises (Freeman et al., 2020, p.12; WHO, 2020, February 8).

A need for information leads to people seeking out both traditional as well as alternative media outlets more. The COVID-19 pandemic has seen subscriptions to Dutch traditional newspapers grow significantly however (Van Gool & Van de Ven, 2020). Digital subscriptions in particular, for example *NRC Handelsblad* experienced a 16 percent increase in digital subscriptions in the year 2020 compared to the previous year, whilst digital subscriptions for *De Telegraaf* rose by 14 percent (De Mik, 2021). But it is known that when people doubt the reliability of mainstream media, they will go looking for substitute places to get their information, which can be via social media, but also through what is called 'alternative media'. Jan van Aken, involved with *Gezond Verstand* ('Common Sense') – an 'alternative' Dutch magazine, believes that 15 to 20 percent of the Dutch population is a potential audience for alternative media like his publication (El-Kaddouri et al., 2020). There is a measurable difference between the quality of the information and conspiracy content of these different types of media. A British study found that the level of both specific and general COVID-19 conspiracy beliefs was lower for people who obtained most of their information about COVID-19 from the BBC than those who did not (Freeman et al., 2020, p.12). Also, all groups of people who obtained most of their information via friends, social media or YouTube all had higher levels of both specific as well as general COVID-19 conspiracy beliefs than those who did not (Freeman et al., 2020, p.12).

2.2.1 Understanding Conspiracy Thinkers

When wanting to understand conspiracy thinkers, it is important to realise that they are not that different from anybody else and that the idea that they are simply 'insane' or 'extremely irrational' is false. Research has shown that all humans tend to be rather bad at evaluating evidence, are all susceptible to biases and that there is little people truly know based on their

own knowledge, as all people tend to rely on external sources of information – be it the media, academia, hearsay or even a calculator (Radboud Reflects, 2020). If society is constructed in such a way that institutions like the government, media and academia can function properly and independently of each other, whilst still allowing for open debate, allowing oneself to be led by these institutions is completely justifiable (Radboud Reflects, 2020). According to Harmen Ghijsen, a philosopher at Radboud University, the reliability of the methodology is what is truly important (Radboud Reflects, 2020).

Only at this point in the cognitive process is where a differentiation can be made between conspiracy- and non-conspiracy thinkers, as the former tend to distrust authorities and mainstream sources, as well as underestimate the value of experts (Radboud Reflects, 2020; Imhoff & Bruder, 2014). The severity of their mistrust is the thing experts find most worrying. Whilst critical thinking is encouraged in most societies, when all sources that could possibly dispute someone's convictions are fundamentally rejected, discussion is no longer possible and a constant reinforcement loop ensues (Douglas et al., 2017; Radboud Reflects, 2020; Roose, 2020). Indeed, as stated by Douglas et al. (2017), a related property of conspiracy theories is how it will maintain people's beliefs by casting any evidence that might lead to falsification of said beliefs as the product of a conspiracy (p.539).

Researchers have found that conspiracy theories are more likely to be believed by people who already have a mistrusting mind-set due to a sense of vulnerability and assailment (Imhoff & Bruder, 2014). When dealing with such high levels of (emotional) strain and mistrust, people are less likely to weigh all evidence for and against and are more likely to accept explanations that simply align with preconceptions and which meet certain social and psychological needs (Douglas et al., 2017, p.538; Freeman et al., 2020, p.2). For, besides a way to express emotions (often anger or fear) and fringe ideas, conspiracy theories offer a variety of other social and psychological benefits, though often they are short-term. For example, conspiracy theories give a greater sense of control, as well as a sense of identity, along with a community and feelings of excitement (Douglas et al., 2017; Radboud Reflects, 2020). Indeed, Douglas et al. (2017) studied the various benefits experienced by conspiracy thinkers and categorized them into three groups; namely *epistemic*, *existential* and *social motives*.

Epistemic motives are related to the desire for sense and meaning making, reducing uncertainty, but also defending existing beliefs from disconfirmation (Douglas et al., 2017, p.538). Meanwhile, the main existential motives for believing in conspiracy theories are people's need for safety, security and control (Douglas et al., 2017, p.539). This coincides perfectly with the sociological concept of '*ontological security'*, which can be defined as '*a*

stable mental state derived from a sense of continuity and order in events and experiences' (Bilton et al., 1998, p.4), and which plays a big role when it comes to the processes of sense- and meaning making in people's lives (Chernobrov, 2016, p.583). Finally, social motives for conspiracy beliefs show the desire for a positive, even valorised, image of the self (or of the 'group') set in stark contrast to the powerful, malevolent "other(s)" (Douglas et al., 2017, p.540). This motive can be amplified by the satisfying feeling of 'being in the know', whilst others are not (Freeman et al., 2020 p.2; Radboud Reflects, 2020).

When it comes to the function of conspiracy theories, Miller (2002) argued that conspiracies theories fulfil two roles: the obvious role of asserting that a conspiracy is in fact afoot, and a more underlying role of social critique (p.41). For what does the supposed existence of said conspiracy say about people's perspective on social, political and/or economic institutions and actors in society? Through this lens, whether or not a conspiracy theory is true is not the issue, but the emotions and grievances that lie underneath are - as they have something to do with how people perceive the ethos and legitimacy of big institutions in society (Miller, 2002; Radboud Reflects, 2020). When alternative explanations start to gain widespread support, this says something about people's views on the basic cultural, social and political assumptions underlying society (Miller, 2002; Radboud Reflects, 2020). Hence, the spread of conspiracy theories could be seen as somewhat of a marker when it comes to potential rifts in said assumptions.

Quite a lot of research has been done on the topic of related characteristics, beliefs and behaviours when it comes to conspiracy thinkers. As stated before, one very common characteristic of conspiracy thinking is high levels of distrust, e.g. towards authorities and science in general, but also in the form of paranoia-like beliefs (Freeman et al., 2020, p.1; Imhoff & Lamberty, 2020, p. 1111; Kowalski et al., 2020, p.2). Psychologist Jan-Willem van Prooijen believes being overly critical and mistrusting towards authorities and their intensions can be seen as a prelude to conspiracy thinking (Grosfeld, 2020). Paranoia-like beliefs are also found to be a mediator between boredom proneness and endorsing conspiracy beliefs – which might be of great relevance during times of quarantine and self-isolation (Kowalski et al., 2020). Other related characteristics are feelings of powerlessness, perceived threats from societal change, anomie, anger, lack of socio-political control, low self-esteem, subjective uncertainty and a general poorer psychological well-being; whilst perceived (real or subjective) social marginalization can furthermore increase the likelihood of mistrusting authorities (Alper et al., 2020, p.2; Bruder et al., 2013, p.11; Freeman et al., 2020, p.2; Stoica & Umbreş, 2020, p.S248; Tonković et al., 2021, p.2, Van Prooijen & Douglas, 2017). Perceived stress as well as stressful

life events have also been found linked to greater believe in conspiracy theories (Alper et al., 2020, p.2).

Furthermore, Jolley & Douglas found in a 2014 study that exposure to conspiracy theories reduces people's willingness to engage in politics. However, a 2020 study by Imhoff et al. found conspiracy thinking only reduces people's willingness of engaging in *normative* political acts (e.g. voting), but that it in fact increases intensions of engaging in *non-normative* political acts (e.g. violent protests) (Marinthe et al., 2020, p.959; Stoica & Umbreş, 2020, p.S247). Indeed, as previously stated, a 2019 study by Rees & Lamberty also found a strong link between conspiracy thinking and a stronger acceptance of violence, as did another study by Uscinski & Parent in 2014, which showed conspiracy thinkers more readily accepted political violence towards *'high powered agents'* (e.g. the government) *'in order to protect themselves'* (Imhoff & Lamberty, 2020, p.1111; Marinthe et al., 2020, p.959).

As briefly mentioned in the introduction, when it comes to the public health domain, conspiracy beliefs have been found to be strong indicators when it comes to lack of adherence to 'medication regimes' (more on this in section 2.3.2) as well as anti-vaccination stances (Bruder et al., 2013, p.2; Freeman et al., 2020, p.12). Ever since the first vaccine was invented by Edward Jenner in 1796, there have been people strongly opposing this practice (Watling, 2019). People opposed to vaccinations believe vaccines are unsafe and/or an infringement of their human rights, and whilst 'anti-vaxxers' are definitely a minority, they are a very active community online (Kandola, 2020). As stated before, holding conspiracy beliefs often goes hand in hand with mistrusting the biomedical sciences, and research has shown conspiracy thinkers are consequently induced to go with alternative therapies instead (Stoica & Umbreş, 2020, p.S247).

2.2.2 Conspiracy Mentality

Back in 1994, social scientist Ted Goertzel found that if someone believes in one conspiracy theory, this greatly increases the chance of them accepting further novel conspiracy theories (Swami et al., 2011, pp.459-460). More studies have confirmed this finding (noteworthy are the studies by Swami et al. from 2010 and 2011), even when conspiracy theories are mutually exclusive or made up specifically for a scientific study (Marinthe et al., 2020, p.958; Swami et al., 2011). Indeed, a 2012 study by Wood et al. showed that people who believed Princess Diana faked her own death were also more likely to believe that she was murdered, and vice versa (Imhoff & Bruder, 2014, p.25).

All these findings combined have caused some researchers to believe that endorsement of specific conspiracy theories, like conspiracy theories regarding COVID-19, largely depends on people's general tendency to view the world as full of conspiracy theories or having a '*conspiracy mentality'* (Marinthe et al., 2020, pp.958-959; Imhoff & Bruder, 2014). This term was first coined in 1987 by social psychologist Moscovici, and describes a propensity to subscribe to general conspiracist beliefs (Bruder et al., 2013, p.2). Believing in completely unrelated conspiracy theories is then understood as signs of a generalized conspiracy mindset, as research shows they are so *'highly intercorrelated that they typically load on one factor'* (Imhoff & Lamberty, 2020, p.1111).

Several ways of measuring conspiracy mentality have been tested over the years and with quite some success, the first being the '*Belief in Conspiracy Theories Inventory (BCTI)'* by Swami et al (2010, 2011). This measuring system consists of 15 items measuring people's beliefs in specific conspiracy theories, but whilst its internal reliability as well as its convergent and discriminant validity were proven to be very good, the focus on specific conspiracy theories causes this instrument to be bound by time and place (Bruder et al., 2013, p.2).

Consequently, two different measuring scales were designed that worked around this problem, namely by making the scales independent of (cultural) knowledge of any specific conspiracy theories by making items more general. One of these measuring systems is the '*Generic Conspiracist Beliefs Scale',* designed by Brotherton, French and Pickering (2013). Their 15-item scale focuses on five major categories of conspiracy theories, which they arrived at through an analysis of 75 items, namely: government malfeasance conspiracy theories, extra-terrestrial cover-up conspiracy theories, malevolent global conspiracy theories, personal well-being conspiracy theories, and control of information conspiracy theories (Brotherton et al., 2013, p.6). Their study demonstrated both internal reliability as well as convergent and discriminant validity (Brotherton et al., 2013).

The other measuring system is the '*Conspiracy Mentality Scale'* by Imhoff and Bruder (2014), which similarly does not refer to specific conspiracy theories, and does not even refer to *"any specific groups that may be responsible for a conspiracy"* (Bruder et al., 2013, p.2). Their study also provided ample evidence for internal reliability, as well as convergent, discriminant and predictive validity (Bruder et al, 2014).

In 2013, Bruder et al. proposed a third scale of measurement, namely the *'Conspiracy Mentality Questionnaire'* (CMQ), in order to add a cross-cultural dimension, as neither the system by Brotherton, et al. (2013) nor the system by Imhoff and Bruder (2014) had been validated in non-Western cultures. This questionnaire consisted of only 5 items and was tested

in the USA, UK, Ireland, Germany and Turkey (Bruder et al., 2013, p.2). The CMQ turned out to be highly correlated with the Conspiracy Mentality Scale, which had been designed by two of the same authors. All in all, their complete study attested to the convergent, discriminant, and predictive validity of the CMQ (Bruder et al., 2013).

2.2.3 Risk Perception

Whilst conspiracy mentality is linked to non-normative prevention behaviours and/or lower adherence to safety guidelines, research on risk perception during the COVID-19 pandemic has shown that perceived risk is also associated with conspiracy mentality (Marinthe et al., 2020, p.971; Tonković et al., 2020, p.3). Research done by Klofstad et al. (2019) on the Zika-virus showed a positive relationship between conspiracy thinking and increased concern about the virus (Marinthe et al., 2020, p.959). Additionally, conspiracy thinking is known to be associated with factors which might result in a higher risk perception, such as higher levels of anxiety and/or paranoia (for example through hostile and negative interpretations of any given information, a key characteristic of paranoia-like thinking) (Bruder et al., 2013; Marinthe et al., 2020, p.959; Tonković et al., 2020, pp.2-3). Research by Šrol et al. in 2021 showed positive correlations between COVID-19 conspiracy beliefs and risk perception and anxiety about the virus, and anxiety was found to mediate the effect of risk perception on COVID-19 conspiracy beliefs in full (Tonković et al., 2020, p.3). Interestingly, Marinthe et al. (2020) found that perceived risk actually acted as a suppressor in the interplay of conspiracy mentality and adherence – consequently resulting in higher levels of normative prevention behaviour (p.972). Section 2.3.2 will elaborate on why risk perception is an interesting factor to consider in the relationship between conspiracy thinking and adherence to prevention behaviour.

2.3 Conspiracy Thinking and the COVID-19 Pandemic

As the global COVID-19 pandemic and countermeasures cause feelings of vulnerability, uncertainty and disruptions of everyday life, conditions in which conspiracy beliefs often develop are perfectly met (Freeman et al., 2020, p.2). Due to the nature of this crisis being pandemic, it concerns (bio)medical issues, which already is a hot topic when it comes to conspiracy beliefs, for example with regards to vaccinations (Freedom et al., 2020, p.2). And whilst, as expected, this pandemic has drawn both old and new conspiracy beliefs about vaccines into the open, they are but a fraction of the full extent of conspiracy beliefs surrounding COVID-19.

2.3.1 COVID-19 Conspiracy Beliefs

5G Conspiracy Beliefs

One of the biggest conspiracy beliefs surrounding COVID-19 is the idea that the virus stems from fifth generation broadband mobile networks, usually just referred to as '5G', which started rolling out worldwide in 2019 (Spieksma & Voss, 2020; WHO, 2020b). The most common conspiracy belief of this nature is that the virus is in fact 'radiation poisoning', with 5G frequencies influencing the human body's oxygen uptake and consequently causes pneumonia symptoms (Owen, 2020; Van den Berg, 2020). A variation of this conspiracy belief is that COVID-19 is already a part of our DNA and the 5G frequencies merely activate the virus (Owen, 2020). Whilst there are several variations on this idea, the consensus is that the cause of COVID-19 is the spread of this new technology around the world (Owen, 2020). There has been no scientific evidence of this belief, or of 5G having any negative health consequences at all (Spieksma & Voss, 2020). Often false claims about Wuhan, China being the first place where 5G got introduced is given as "proof", since the COVID-19 outbreak started there. However, 5G had been tested in many places in China before Wuhan, and pre-Wuhan no COVID-19 deaths had taken place (Spieksma & Voss, 2020; Van den Berg, 2020).

Bio-weaponization Conspiracy Beliefs

Another conspiracy belief is that of the virus being a bioweapon. Once more there are many variations of this belief in circulation, many of which get substantiated by conspiracy claims of the virus having been created in a laboratory. For example, one of the many conspiracy beliefs focusing on the virus being man-made is based on an article from a pre-print website in January 2020, in which Indian scientists claimed that the protein sequences of the COVID-19 virus showed great similarity with HIV (McDonald, 2020). Whilst this claim was quickly debunked by other scientists and the paper got voluntarily withdrawn, it is still widely circulated as "proof" of the virus being man-made, which subsequently inspired speculation on bio-weaponization (McDonald, 2020; Owen, 2020). Depending on whom you ask the perpetrators vary, ranging from various countries trying to influence wars to the 'deep state' wanting to rig elections or Bill Gates wanting to track people (Owen, 2020).

Fake News / 'Nothing More Than a Flu' Conspiracy Beliefs

Two of the most dangerous conspiracy beliefs surrounding the COVID-19 pandemic have been the ideas that the entire pandemic is either a) 'fake news' and a 'hoax', or b) 'overblown' and 'nothing more than a flu' (Owen, 2020). These incorrect beliefs are considered

most dangerous due to the fact that keeping the virus contained relies on how willing people are to take counter measures seriously (Owen, 2020).

Convergence of Different Conspiracy Beliefs

Whilst it can be useful for academics to categorize data into groupings with clear demarcations, it must be said that COVID-19 conspiracy beliefs, like many conspiracy beliefs, are not always so easily placed into separate groupings. For example, building on the idea of COVID-19 already being a part of our DNA and 5G frequencies activating it, some people also believe that the virus can then make further alterations to your DNA, hence making it a bioweapon (Owen, 2020). Indeed, a distinct feature of the current 'conspiracy landscape' is that you often see different conspiracy beliefs like 5G and anti-vaccination melted together into a much broader conspiracy coalescence, along with existing critiques regarding e.g. technology, regular healthcare or Big Pharma (Radboud Reflects, 2020). A good example of this are the conspiracy beliefs surrounding COVID-19 and Bill Gates, which touch upon an entire arsenal of different conspiracy beliefs regarding COVID-19 being man-made, bio-weaponization, 5G, big-Pharma and anti-vaccination (Owen, 2020; Spieksma & Voss, 2020).

2.3.2 Prevalence of COVID-19 Conspiracy Beliefs in National Studies

Of the national studies researching COVID-19 conspiracy beliefs included in this study, only the English and Polish studies remarked upon the prevalence of conspiracy thinking in their samples. To quote Freeman et al., 2020 – *"Approximately 50% of the population showed little evidence of conspiracy thinking, 25% showed a degree of endorsement, 15% showed a consistent pattern of endorsement, and 10% had very high levels of endorsement of coronavirus conspiracy beliefs."* (p.1). Meanwhile Poland had relatively low numbers of people who endorsed most COVID-19 conspiracy beliefs (1-7% of the population - but with the exception of conspiracies regarding the Polish government), though in one study approximately 1 in 3 people was found to fully support at least one conspiracy belief whilst in the other study this number was 1 in 5. Most conspiracy beliefs had a low to moderate prevalence however (5-23%) in both studies with an average of 10% of the population's adherence.

2.3.3 Adherence to COVID-19 Prevention Measures

All of the national studies examining adherence to prevention measures during the COVID-19 pandemic found at least some sort of link with either conspiracy thinking and/or conspiracy mentality (Alper et al., 2020; Freeman et al., 2020; Marinthe et al., 2020; Kowalski

et al., 2020). Furthermore, previous research regarding COVID-19 conspiracy thinking has clearly shown negative relationships between mistrust (of scientific-, governmental- and/or media outlets) as an aspect of conspiracy thinking and adhering to normative prevention behaviour in the form of safety- and/or self-isolation guidelines (Freeman et al., 2020; Marinthe et al., 2020; Kowalski et al., 2020; Tonković et al., 2020). Meanwhile, it has been shown that during pandemics, with the passing of time and increasing economic consequences, trust in science declines and public scepticism grows (Tonković et al., 2020, p.3). As stated before, paranoia-like thinking is linked with conspiracy thinking, but furthermore it is often believed to be positively associated with lower adherence to safety guidelines (potentially via higher risk perception) (Freeman et al., 2020; Kowalski et al., 2020; Marinthe et al., 2020, p.959). For example, the Polish national study found significant, albeit weak, relationships between paranoia-like beliefs and adherence to safety measures (Kowalski et al., 2020, p.7).

Fair to note is that in the case of the French national study, whilst they found a small, but positive relationship between conspiracy mentality and non-normative prevention behaviour, they only found a negative relationship with what is considered *'extreme'* normative behaviour - namely self-isolation – and no association with less extreme normative behaviour (Marinthe et al., 2020, p.969). A rapid review by Webster et al. (2020) on adherence to self-isolation in previous studies found rates as little as 0 to 92.8% across eight studies (p.164). Some more relevant factors linked to adherence to self-isolation found in this review were *'socio-cultural norms and perceived pro-social character of isolation, perceived benefits of quarantine, perceived risk of disease outbreak and trust in government'* (Kowalski et al., 2020, p.2).

The English national study showed higher levels of COVID-19 conspiracy thinking to also be associated with being less likely to accept diagnostic tests or future vaccinations (Freeman et al., 2020, p.12). In general, the English study found adherence to guidelines to be high, with approximately 20% adhering to a lower extent (Freeman et al., 2020, p.12). The only other national study explicitly stating their adherence findings was Poland, which found them to be moderately high to high.

Meanwhile, the Polish national study found that risk perception, internal motivation to isolation, and trust in media outlets were moderators between the adherence to safety measures and COVID-19 conspiracy beliefs, whilst external motivation to isolation, trust in government outlets and boredom were not (Kowalski et al., 2020, p.6).

The interplay between prevention behaviour and 'risk perception', is one worthy of some further elaboration, as some studies differ on what type of association this may be (Alper

et al., 2020, p.3; Marinthe et al., 2020, p.960). The majority of previous studies have shown that higher risk perception is associated with higher levels of undertaking prevention behaviour, with the exception of a study conducted in Wuhan, China in 2020, which showed a negative relationship between these two variables (Alper et al., 2020, p.3; Kowalski et al., 2020; Marinthe et al., 2020). Furthermore, a 2007 meta-analysis of 34 different studies found a moderate positive correlation between perceived risk and the likelihood of vaccination and a 2010 study on the swine flu (A/H1N1) pandemic of 2009/2010 found perceived risk increasing the likelihood of vaccination (Marinthe et al., 2020, p.960). Indeed, as stated before, whilst conspiracy mentality might be linked to non-normative prevention behaviours and/or lower adherence to safety guidelines, the perceived risk to oneself seems to act as a suppressor, consequently resulting in higher levels of normative prevention behaviour (Marinthe et al., 2020, p.972).

These findings regarding risk perception are important as they could provide valuable insights in how to increase the adoption of safety- and isolation guidelines amongst the – more reluctant – members of the public, especially since previous research would suggest different points of importance. According to M. J. Crockett – a neuroscientist who has researched behaviour during pandemics, prevention behaviour like staying home and placing greater importance on hygiene is greatly bolstered by clearly letting people know that refraining from such prevention behaviour can get someone else getting seriously ill (Brooks, 2020). This finding is supported by Pechmann et al. in 2003, as well as by Martin & Kamins in 2019 (Marinthe et al., 2020, p.970). Researching an anti-smoking campaign, the latter found that focus on perceived risk to others was more effective than a focus on 'death or social loss' (Marinthe et al., 2020, p.970). And whilst not pertaining to risk perception exactly, research by Abadi et al. (2020) did find that anxiety about others' infections was a stronger predictor for anxiety about the COVID-19 virus than anxiety about themselves getting infected (p.23).

Meanwhile, Bruder et al. (2013) showed no particular relation between conspiracy mentality and 'death anxiety', but current findings seem to suggest perceived risk of death might still be an important factor in the relationship between conspiracy mentality and adherence of prevention behaviour (Marinthe et al., 2020, p.970). Indeed, the main study on the interplay between risk perception, conspiracy mentality and adherence to prevention behaviour differentiated between different types of risk perception - namely risk of death, risk of contamination of the general population, risk of personal contamination- found that only risk of personal contamination and risk of death had indirect effects on adherence, whilst risk of

contamination of the general population did not (Marinthe et al., 2020). The latter finding is most interesting, considering previous research found risk to others to be an important factor.

2.3.4 The Case of The Netherlands

Conspiracy Thinking in The Netherlands

In 2020 research done by market research bureau *Ipsos* in collaboration with current affairs program *Nieuwsuur (News Hour)* found that when confronted with the statement that COVID-19 was a biological weapon and made in a laboratory, 15 percent of the people agreed, whilst 29 percent claimed to just not know (Grosfeld, 2020). Moreover, 5 percent believed that Bill Gates was likely to be behind it all, whilst 4 percent believed the pandemic was related to the 5G-network (Grosfeld, 2020). A spokesperson from the Rijksinstituut voor Volksgezondheid en Milieu *(RIVM - the National Institute for Public Health and the Environment)* told the Dutch House of Representatives in November 2021 that between 7 and 11 percent of the Dutch population is not willing to get a COVID-19 vaccination, whilst 1 to 5 percent is still in doubt (RTL Nieuws, 2022). Furthermore, I&O Research interviewed 2230 Dutch people in 2022 and found that almost 4 out of 10 parents were not going to vaccinate their children of 5 to 11 years old (ANP, 2022). According to the RIVM website 89,2% of all Dutch adults had gotten at least one of the two COVID-19 vaccination shots by 23rd of January of 2022, whilst 86,2% had gotten both (RIVM, 2022a). Meanwhile, when it comes to how much conspiracy mentality might be resonating in the Netherlands, research done in 2020 by the BBC showed an interesting finding, namely that when it comes to the usage of QAnon-related hashtags the Netherlands is third in line, after the United Kingdom and Germany (Bouma, 2020). They found that such QAnon-related hashtags had been used approximately 70,000 times on Dutch Twitter in the three months prior to the article coming out (Bouma, 2020). QAnon and conspiracy thinkers in general have also been popping up in Dutch news in relation to threatening and violent behaviour towards politicians or journalists (Bouma, 2020; Van Gool & Van de Ven, 2020). The number of cases concerning threats against politicians that appeared before court increased from 15 to 43 in the year 2020, and it is believed that 2021 showed a similar increase even though exact numbers are still unknown (Botje, 2022).

Another feature of this infodemic has been that throughout 2020 cell towers around the Netherlands got burned down by civilians – in the period between April and the end of May alone twenty-eight cell towers were burned down (Van Gool & Van de Ven, 2020). Whilst this type of vandalism has declined, in the same period protest group *Viruswaanzin (*'Virus-

madness', now called *Viruswaarheid* or 'Virus-truth') started organising protests and has been active ever since – both in the form of protests as well as pursuing legal cases against the government (Van Gool & Van de Ven, 2020).

Adherence to Normative Prevention Measures in The Netherlands

During the COVID-19 crisis the RIVM shared the outcome of a survey about attitudes and adherence normative prevention measures filled in by a group of Dutch citizens representative of the Dutch population every three weeks (RIVM, 2022b). Between 4th and 10th of January 2022, 5251 people participated in the survey (RIVM, 2022b). Its outcome is presented in the table below. First the relevant COVID-19 prevention measure is mentioned, then the percentage of people who self-reported they adhere to said measure, the percentage of people who support said measure and how these percentages relate to the previous survey taken ('higher', 'lower' or 'no change').

Tabel 2.1 – Adherence to Normative Prevention Measures Between the 4th and 10th of January 2022 in NL

COVID-19 PREVENTION MEASURE	% OF ADHERENCE	% OF SUPPORT	DIFFERENCE WITH LAST SURVEY*
Facemask in public transport	96%	83%	*Adherence*: no change *Support*: lower
Max. number of visitors at home	80%	46%	*Adherence*: lower *Support*: lower
Facemask in public indoor venues	79%	79%	*Adherence*: higher *Support*: lower
Avoid crowded places	71%	87%	*Adherence*: higher *Support*: lower
Work from home if possible	69%	76%	*Adherence*: higher *Support*: lower
Stay at home with symptoms	65%	88%	*Adherence*: no change *Support*: no change
Cough and sneeze into your elbow	65%	86%	*Adherence*: no change *Support*: lower
Get tested with symptoms	63%	83%	*Adherence*: lower *Support*: lower
Keep 1.5 meters distance	62%	83%	*Adherence*: higher *Support*: lower
Self-test before visiting	31%	42%	*Adherence*: higher *Support*: higher
Wash your hands often	30%	78%	*Adherence*: lower *Support*: lower
Ventilate homes sufficiently	27%	88%	*Adherence*: no change *Support*: no change

** Shows with 95% certainty (at minimum) whether there is a statistically significant change with the last survey outcomes. (RIVM, 2022b).*

2.4 The Current Research – the Research Aim and Hypotheses

As stated before, this master thesis aims to contribute to the existing research body on the mechanisms concerning the adherence to COVID-19 safety measures and conspiracy thinking. At the point of writing, no Dutch national overview had been done on this topic, so by conducting this study in the Netherlands this master thesis will be answering the call for duplication by previous scholars researching this topic in their own respective countries (Freeman et al., 2020 p.12). This thesis' societal relevance lies in providing more information

on said mechanisms, as this can offer lessons on how to enhance an outbreak response. Meanwhile, as previous research has also stressed the need for more information on the relationship between risk and conspiracy beliefs this research will pay special attention to addressing these gaps of knowledge (Marinthe, et al., 2020, p.971). Researching the perceived risk of contamination of the general population is especially interesting in the context of the Netherlands as the government repeatedly used solidarity and the collective interest as well as protecting vulnerable citizens and alleviating the pressures on the health sector as motivations to adhere to the prevention measures (Rijksoverheid, 2020a; Rijksoverheid 2020b; Onderzoeksraad voor Veiligheid, 2020, p. 187).

The following hypotheses on prevalence of conspiracy thinking in the Dutch population were formulated based on the research done by *Ipsos* and *Nieuwsuur* in 2020 and the available statistics from the other national surveys. Low to moderate numbers are expected for both specific COVID-19 beliefs (anywhere between 4 and 25%) as well as for conspiracy mentality (anywhere between 10% and 15%) *(Hypotheses 1a+1b)*. When it comes to prevalence of adherence to normative prevention measures, findings are in general expected to be high, compared to moderately high to high adherence rates found in other national surveys. This is corroborated by research done by the RIVM – with the possible exceptions of lower results for the prevention measures of self-testing before visiting, washing hands often and ventilating homes sufficiently (RIVM, 2022b) *(Hypothesis 2)*. This study is also expected to confirm that holding specific COVID-19 conspiracy beliefs as well as having a conspiracy mentality are negatively related to adherence to normative prevention measures *(Hypotheses 3a + 3b)*. Finally, it is expected that risk perception will be found to function as a moderator between conspiracy thinking and adherence to normative prevention measures. As previous research on this topic is mixed, it is expected this moderation will occur either via all three types of risk perception - namely risk of death, risk of contamination of the general population and risk of personal contamination – or just via risk of death and risk of personal contamination *(Hypothesis 4)*.

As stated before, these hypotheses have been based partly on results from the national surveys in other countries backed by the following reasonings. Regarding conspiracy thinking, results in the Netherlands will likely be similar to the other country surveys based on for example the trust in science statistics per country – which are all very similar, with the exception of Turkey (see Figure 2.1). Potentially, the Netherlands will score even lower than the other

countries in conspiracy thinking as the Netherlands had a lower CMQ mean score pre-pandemic in a study conducted by Imhoff, R., Zimmer, F., Klein, O. et al. (Imhoff et al., 2022).

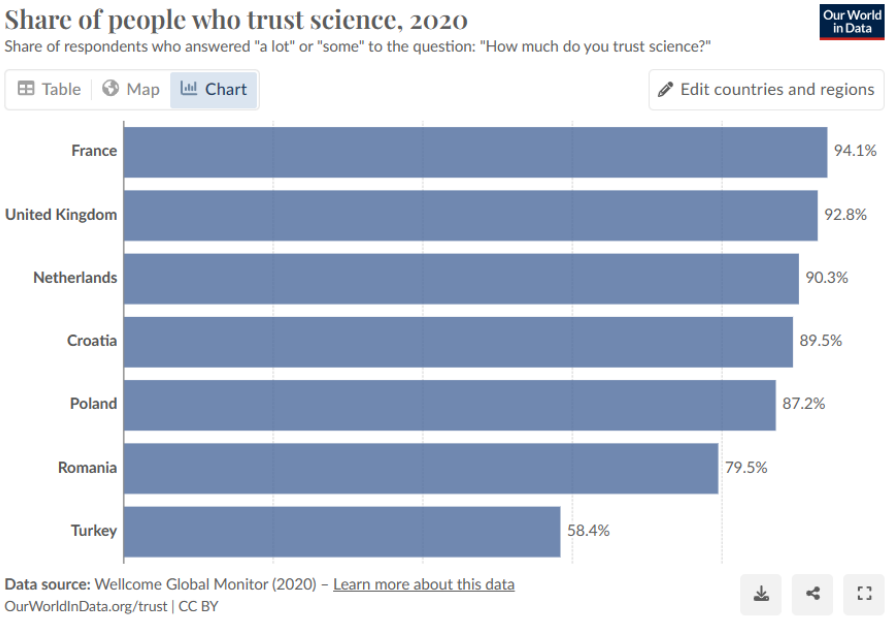


Figure 2.1: Depiction of share of people who trust science per country in 2020. Image source: Our World in Data, 2020a.

Additionally, trust in one's government would most definitely play an important role in the effectiveness of crisis communication. In light of this survey, a higher level of trust could be an indication of higher levels of adherence to normative prevention measures issued by the Dutch government in comparison to other countries. When looking at the trust people have in their national government, the Netherlands scores more than 20 percent points higher than the other countries involved (see Figure 2.2). Consequently, expecting the Netherlands to score relatively high on adherence is a reasonable hypothesis.

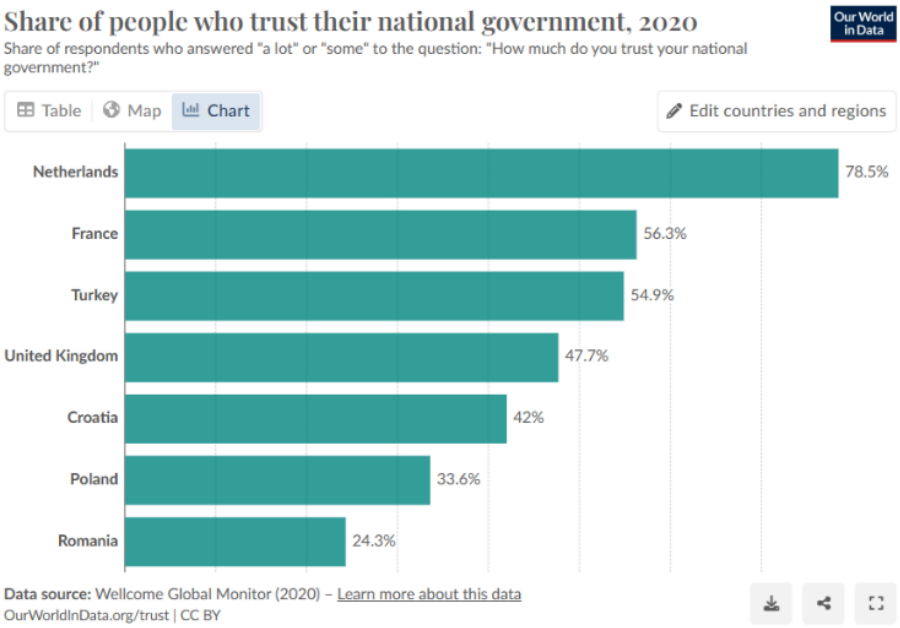


Figure 2.2: Depiction of share of people who trust their national government per country in 2020. Image source: Our World in Data, 2020b.

3. Methodology

This study was designed to answer the question of 'How does conspiracy thinking explain people's prevention behaviour in the midst of a pandemic?' The research methodology will be explained in the following five sections addressing the research design (3.1), materials (3.2), data collection (3.3), data analysis (3.4) and comments on the quality criteria of the methodology (3.5).

3.1 Research Design

This empirical study is meant as explanatory research, focusing on the mechanisms surrounding conspiracy thinking and prevention behaviour in times of crises. The study is considered deductive, as the theoretical framework offers a trove of knowledge on said mechanisms, but it is useful to test and gather more data on said phenomenon during different crises and in different contexts, all with the purpose of confirming and drawing further lessons for outbreak response. Indeed, throughout the COVID-19 pandemic several national studies on conspiracy thinking and COVID-19 prevention behaviour were conducted to contribute to this body of knowledge. This study aims to do the same by focusing on the Netherlands as its case study. This country was picked specifically because no Dutch national studies on this topic in this context had been done at the start of the writing process based on the information available at the time. Adding another national overview to the existing body of knowledge can create more opportunities to compare and contrast between studies and might lead to further insights. This study is of quantitative design and makes use of a survey, mainly because its aim is to identify relationships between variables within a sample of the Dutch national population, compare findings with the other studies and draw lessons from the overall data. The larger sample size possible in quantitative research is key when it comes to extrapolating patterns found in a sample to a general population. As such quantitative research best serves this study's purposes as opposed to qualitative research. Furthermore, the potential sensitive nature of the topic makes anonymity of all data highly desirable, which makes a quantitative research design an even better fit. Even though quantitative research poses restrictions on how participants are able to answer (e.g. with the implementation of Likert scales) and cannot go as in-depth as qualitative research might, for the purposes of this study quantitative research is the obvious choice.

3.2 Materials

As stated before, this study made use of a survey (Appendix A+B). The survey consisted of five instruments, measuring 1) sociodemographic factors, 2) conspiracy mentality, 3) belief in specific COVID-19 conspiracy theories, 4) adherence to COVID-19 normative prevention measures and 5) perceived risk. All included instruments are replicated or adapted from existing instruments that have previously been used in academic research. The choice of these instruments was motivated both by a need of ensuring that the instruments are reliable and valid, as well as a need for comparability with the already existing national studies mentioned. The following section will explain the essence of each instrument included.

3.2.1 Measures

The first instrument concerning sociodemographic factors was included in this survey to give a general description of the population. The first five items included were age, gender, education, self-perceived socio-economic status, political ideology and religiosity. Additionally, a 3-point scale item asked about the participant's level of risk for (severe) COVID-19, as this could play a factor in levels of anxiety concerning the virus.

To measure conspiracy mentality the Conspiracy Mentality Questionnaire (CMQ) by Bruder et al. (2013) was included. This 5-item instrument was chosen not only because it does not refer to any specific conspiracy theory, but also because unlike other conspiracy mentality scales it has been validated in both Western - as well as non-Western cultures (Bruder et al., 2013, p.2). According to Bruder et al. (2013) accounting for a cross-cultural dimension is important even when a study takes place within a single country, as previous research has shown that *"subcultures within national groups are differentially prone to belief in conspiracy theories"* (Bruder et al. 2013, p.2). Meanwhile, as stated before, their complete study attested to the convergent, discriminant, and predictive validity of the CMQ (Bruder et al., 2013) Finally, of the other national studies concerning this topic the majority used the CMQ as their chosen instrument to measure conspiracy mentality, so using the CMQ improves the comparability of this study.[1]

The third instrument had the purpose of measuring a participant's belief in specific COVID-19 conspiracy theories. The 17-item instrument was compiled by comparing and evaluating COVID-19 specific conspiracy theories included in the Turkish -, English - and

[1] Whilst most useful for this particular survey, there is a wider discussion surrounding the use of measuring instruments like the CMQ in studying conspiracy thinking. Opinions vary on the use of standardized questionnaires methodologically as well as on the broader theoretical aspects of defining conspiracy thinking itself. If interested in said discussion, two relevant articles would be Raab et al. (2013) or Aupers (2012).

Croatian national study surveys in order to form a comprehensive list as well as to maximize the comparability of the different national studies. The Turkish and English surveys also included some official explanations as a type of 'reverse items', consequently three out of seventeen items in this instrument are items like *'The virus is naturally occurring'.* Each item was rated on a 7-point Likert scale.

The fourth instrument focused on the participant's levels of adherence to normative prevention measures. Seeing as at the time of survey distribution not many normative prevention measures were still in force in the Netherlands the survey asked the participant to retrospectively comment on their adherence levels for the most common normative prevention measures used during Dutch 'intelligent lock-down' periods, in order to maximize comparability with the other COVID-19 national studies. This 14-item instrument was based on the RIVM questionnaires about adherence by the Dutch population to prevention measures which were conducted every three weeks throughout the pandemic, as well as on corresponding instruments measuring prevention measure adherence in other national studies. Like the previous instrument, the chosen items were selected in order to form a comprehensive list as well as maximize the comparability of the different national studies. Each item was rated on a 5-point Likert scale.

The fifth instrument measuring perceived risk consisted of an adapted version of another already existing instrument, namely a 4-item scale for personal risk perception created by Oh et al. (2020). This instrument was adapted by adding two more items regarding perceived risk of contamination of the general population and perceived risk of death, as inspired by Marinthe et al. (2020). The original 4-item scale was created in the context of the MERS outbreak in 2015, but was also used by Alper et al. (2020) in a translated version in the context of the COVID-19 pandemic in Turkey. The added items were included for a more inclusive view of perceived risk as well as enhanced comparability. Each item was rated on a 7-point Likert scale.

3.3 Data Collection

3.3.1 Participants and Collecting Procedure

The survey was put together with the use of Qualtrics. This study tried to keep as close to probability sampling as possible by mainly recruiting participants on Reddit subforums and Facebook groups associated with towns and municipalities in the hope of gaining a sample most representative of the whole of the Netherlands both geographically as well as demographically. A part of the respondents will have been gained however due to having posted on two university

pages and three groups specifically with the purpose of spreading academic surveys. The survey was online from December 1st, 2022 to June 27th, 2023.

The population to be sampled concerns the Dutch population of 16 years and older, which meant a population size of 14.897.000 (CBS, 2023). The age cut off was introduced because the subject matter of the survey was deemed potentially too complicated for children. Consequently, to have a representative sample for said Dutch population the sample size needed to be 385 respondents (based on a standard of 95% confidence level with a 5% margin of error). Meanwhile, in order to have 80% power to measure correlations with a 0.12 correlation coefficient ($\alpha = 5\%$) the sample sized needed to be at least 543 participants. Based on the results of the comparable national studies from other countries $r \geq 0.12$ would cover nearly all relevant correlations researched.

3.4 Data Analysis

Qualtrics recorded 571 responses and automatically checked for any missing data, whilst used reCAPTCHA scores to flag potential bots. A total of 563 respondents completed the survey in its entirely, of which two were manually excluded for falling below the 16 years old age limit set and a further four were manually excluded for scoring less than 0.5 on the ReCAPTCHA score. Consequently, the final sample consisted of 557 respondents.

From the data set we calculated four new variables, namely four mean scores. As a general rule these means were calculated by averaging the relevant item scores from the relevant instrument per participant. For a Conspiracy Mentality Mean the relevant item scores consisted of all five items from the second instrument, for a specific COVID-19 Conspiracy Belief Mean they consisted of all 17 scores from the third instrument, for a Prevention Measures Adherence Mean they consisted of item 2-13 from the fourth instrument and for a Personal Risk Perception Mean they consisted of item 1-4 from the fifth instrument.

This first manual examination of the data happened in Excel, which was furthermore used to calculate certain mean scores (as discussed above) and to create both histograms and scatterplots. The main software used for analysing the data was JASP (version 0.17.2.1).

To find out if the sample leaned towards the left or right on the political ideology axis a one-sample t-test was used, testing against 4 (on a scale from 1-7). No other statistical tests were necessary in the sample characteristics section.

Section 4.2.1 concerning specific COVID-19 beliefs included a Pearson's correlation to test whether individual COVID-19 beliefs correlated with each other.

Furthermore, section 4.4 included Pearson's correlations to test whether holding specific COVID-19 beliefs correlated with adherence to normative prevention measures, as well as whether conspiracy mentality correlated with adherence to normative prevention measures. Section 4.5 also included a Pearson's correlation to test the correlation between the three risk perception factors, namely 'personal risk perception' (or *'PRP'*), perceived risk of contamination of the general population (or *'GPRP'*) and perceived risk of death (or *'PRD'*).

Finally, for section 4.5 six regression models (ANOVA) were build (see table 3.1). These regression models could show the individual contributions to adherence to normative prevention measures of the three different types of risk perception factors alongside either specific COVID-19 beliefs or conspiracy mentality.

Table 3.1 Regression models built to test the contributions to the adherence of normative prevention measures by conspiracy thinking and risk perception factors.

Specific COVID-19 Conspiracy Beliefs	
Model 1	Adherence = Specific COVID-19 Conspiracy Beliefs (…)
Model 2a	Adherence = Specific COVID-19 Conspiracy Beliefs + Personal Risk Perception
Model 2b	Adherence = Specific COVID-19 Conspiracy Beliefs + General Population Risk Perception
Model 2c	Adherence = Specific COVID-19 Conspiracy Beliefs + Perceived Risk of Death
Model 3	Adherence = Specific COVID-19 Conspiracy Beliefs + Personal Risk Perception + General Population Risk Perception +Perceived Risk of Death
Conspiracy Mentality	
Model 4	Adherence = Conspiracy Mentality (…)
Model 5a	Adherence = Conspiracy Mentality + Personal Risk Perception
Model 5b	Adherence = Conspiracy Mentality + General Population Risk Perception
Model 5c	Adherence = Conspiracy Mentality + Perceived Risk of Death
Model 6:	Adherence = Conspiracy Mentality + Personal Risk Perception + General Population Risk Perception +Perceived Risk of Death

Regression models focusing on both specific COVID-19 conspiracy beliefs as well as conspiracy mentality were made. This distinction was made to be comparable to both the previous national studies using conspiracy mentality as its coefficient as well as those using specific COVID-19 conspiracy beliefs (as well as conspiracy mentality) as its coefficient. Furthermore, an argument could be made that researching both separately is important as there is the possibility that due to a pandemic being a time of great uncertainty but great urgency more people might be inclined to believe specific COVID-19 conspiracy beliefs whilst scoring lower in conspiracy mentality, as they might adhere less to general conspiracy thinking in less uncertain times.

For all of the statistical tests described above the criteria of $\alpha = 0.05$ was used.

3.5 Quality Criteria of the Methodology

The current research includes many ways in which its validity and reliability were safeguarded, but it also has its limitations in this regard.

Firstly, when it comes to the reliability of this study, as described in section 3.3.1, a sample size of 543 was needed to have a representative sample of the Dutch population with enough power to detect the relevant correlations based on results of previous studies. The sample size of 557 met this requirement and could therefore be considered a reliable sample for the purpose of this study.

A limitation regarding the reliability of the survey would be however that the online nature of the survey prevented fully safe harbouring against any accidental errors (e.g. a participant not understanding the question or the environment in which the participant filled out the survey influencing the participant's answers). However, by using mostly instruments previously used and tested by other researchers as well as having this particular survey checked by numerous parties before it went online, it is safe to say the clarity of the survey was safeguarded as best as possible on this side of the equation. Furthermore, whilst the online nature of the survey caused less control over any accidental errors taking place, different methods of spreading this survey were deemed unrealistic and impractical for the purposes of this study.

A general comment on the reliability, as well as the validity, of some of the instruments used is needed. As described in section 3.2.1, certain instruments are adapted versions of previously developed instruments or are newly developed specifically for this survey. This means that, whilst the originally developed instruments have certainly been used for previous research, any adapted versions used in this survey as well as the newly developed instruments have not been fully tested for their psychometric properties. All instruments were furthermore translated from English into Dutch by a professional translator, after which they were not again tested for their reliability or validity. Nevertheless, great effort was put into keeping the instruments as close as the original instruments as possible, and any adaptations that were made were only done so to strengthen the comparability to the other national studies (as was the case with instrument 3 and 5) or to allow for the Dutch context of this particular study (as was the case with newly created instrument 4).

Concerning the internal validity of the survey, this study might be receptable to certain other types of response biases, as is the case with many surveys that use self-reported behaviours and opinions. For example, the retrospective nature of instrument 4 and 5 of the survey is not ideal for obtaining fully accurate data, as results might be (slightly) skewed due

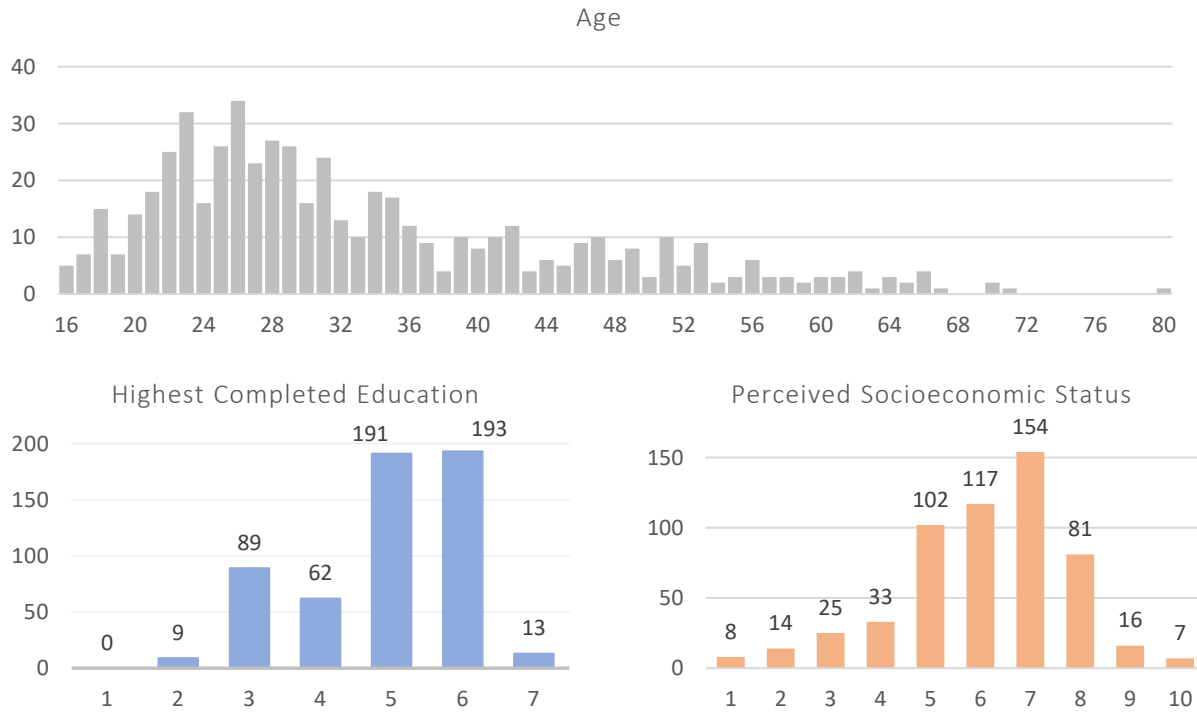
to recall bias. There is also a possibility that participants aimed to give (more) socially acceptable answers as opposed to their true behaviours or opinions. This social desirability bias might be even more relevant here due to the sensitive topic of the survey. Also mostly concerning the internal validity, there is a possibility that further relevant COVID-19 conspiracy theories were overlooked in the assembling of instrument three. However this instrument was compiled by comparing and evaluating COVID-19 conspiracy lists from three other national study surveys, with the goal to maximize comparability, and so it would be fair to deem the resulting list very comprehensive.

Touching upon the external validity of the survey, the online nature of the survey meant the part of the Dutch population that does not use the internet would never have a chance to be represented in the sample. Additionally, the choice of using Reddit and Facebook to distribute the survey is bound to influence the demographic represented in the sample as the demographic that these websites attract might not fully correspond with the Dutch population as a whole. A voluntary online survey also demands a certain level of interest in the topic or an altruistic mindset to participate in the research. Along the same lines, it is unknown whether attitudes towards the survey's topic influenced participant's decision to participate in this survey or not. Whilst the online nature of the survey might have introduced a selection bias, an argument in favour of an online survey could be made based on the fact that according to the Centraal Bureau voor de Statistiek (*CBS – Statistics Netherlands)* 97% of the Dutch population (12 years and upwards) had access to the internet at home in the year 2022 when the survey was first published, whilst 90% of said population was online daily (CBS, 2023b). And by mainly focusing on subforums and groups with demographical affiliation an attempt was made to recruit a diverse sample throughout the Netherlands, whilst trying to avoid over-representing any particular subgroups. Based on the popularity of the posts by which the survey was disseminated, the vast majority of the recruiting took place through these subforums and groups with demographical affiliation, however twice posts were made on university affiliated pages and three times in groups specifically designed for the spreading of surveys. Yet, as stated before, other methods of spreading this survey were simply deemed unrealistic and impractical for the purposes of this research. Furthermore, the argument favouring online surveying over other methods could be furthered based on the fact that conspiracy theories mostly spread through the internet and so using a similarly online sampling method could be justified (Tonković, et al., 2021, p .10). All in all, whilst online sampling was deemed necessary, the potentially resulting selection bias is reason to be cautious when it comes to generalising any findings to the broader public.

4. Results

4.1 Sample Characteristics

A general description of the sample can be split up into the following sociodemographic factors: age, gender, education, perceived socio-economic status, political ideology and religiosity. The mean age of the sample was 33.4 years old (SD = 12.2). The sample consisted of more men (n = 337) than women (n = 212) and non-binary people (n = 8). The median highest education level was higher professional education (n = 191), which along with university (n = 193) was the most commonly reported highest level of completed education. However, the mean highest completed education was slightly below higher professional education (m = 4.914). The mean self-perceived socioeconomic status was 6.1 (SD = 1.7) on a scale from 1 to 10, with 1 meaning lowest and 10 meaning highest self-perceived socioeconomic status. The ideology of the sample was significantly left-leaning with a mean of 3.2 (SD = 1.4) on a scale from 1 to 7, with 1 meaning *strongly left wing* and 7 meaning *strongly right wing* ($t(556) = -13.303$, $p < .001$). The religiosity of the sample was in general very low with a mean of 1.8 (SD = 1.4) on a scale from 1 to 7, with 1 meaning *not religious at all* and 7 meaning *very religious*. Figure 4.1 depicts the age, highest education level, perceived socioeconomic status, ideology and religiosity of the sample.



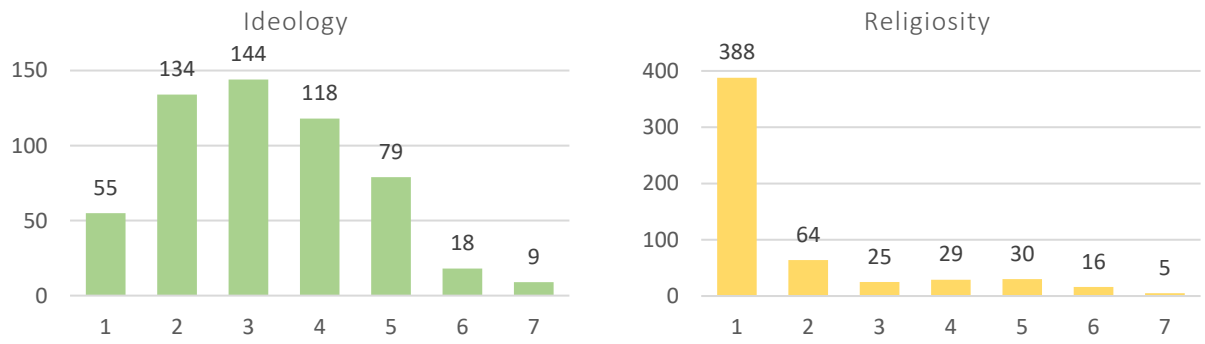


Figure 4.1: Frequency distributions depicting age, highest completed education level, perceived socioeconomic status, ideology and religiosity.

Finally, respondents reported their perceived risk level (severe) COVID-19. 472 respondents reported being at a low risk (1), 71 respondents reported being at a high risk (2) whilst 14 respondents reported being at a very high risk (3) with a mean of 1.2 (SD = 0.4).

4.2 Belief in Specific COVID-19 Conspiracy Theories and Conspiracy Mentality

4.2.1 Belief in Specific COVID-19 Conspiracy Theories

Mean adherence to COVID-19 specific conspiracy beliefs was 1.628 (SD = 0.533; 95% Confidence Interval = 1.349 – 1.907) on a scale of on a scale from 1 to 7, with 1 meaning *'strongly disagree'* and 7 meaning *'strongly agree'*. Participants means varied between 1 and 6.571, see Figure 4.2). In other words, adherence to COVID-19 specific conspiracy beliefs was generally low in the study population, but there was a large variation of adherence in the sample. Based on the Likert scale used, mean scores >4 (4 corresponding to '*neutral')* were in this study considered as 'conspiracy thinking', with mean scores ≥ 5 showing higher positive responses to conspiracy beliefs (*'somewhat agree'* and upward). Of 557 participants 17 (3,05%) people had a COVID-19 conspiracy beliefs mean score of >4, 5 (0,90%) people had a COVID-19 Conspiracy Beliefs of ≥ 5. Of the 17 participants that had a COVID-19 conspiracy beliefs mean score of > 4 the mean score was 4.79.

The number of participants who adhered to at least one conspiracy belief (indicated by at least one score of ≥ 5) was 154 (27,6%). Amongst this group 92 (16,5%) participants scored ≥ 6 (corresponding to '*agree'*) for at least one conspiracy belief, whilst 38 (6,8%) participants scored 7 for at least one conspiracy belief.

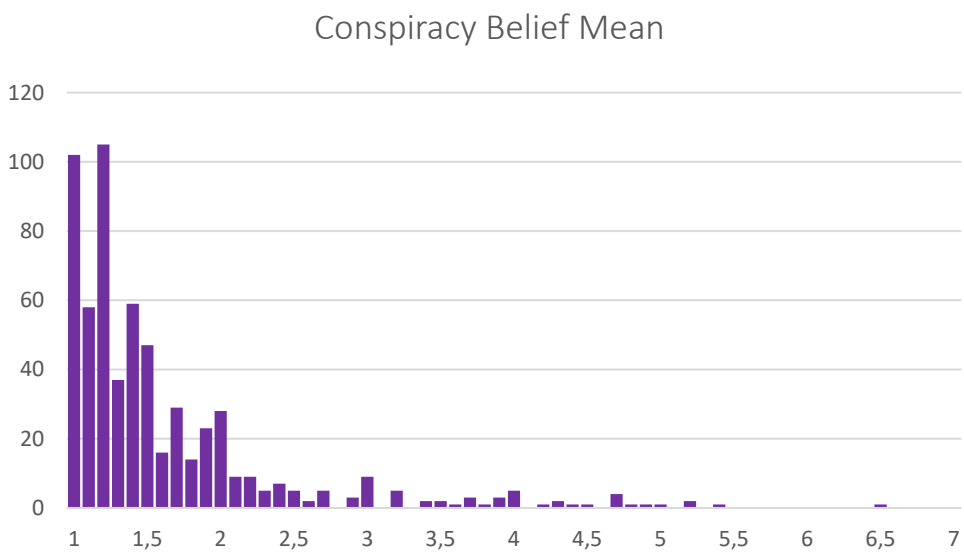


Figure 4.2: Distribution of means of participants' adherence to specific COVID-19 conspiracy beliefs.

Mean adherence to the reverse items included amongst the COVID-19 specific conspiracy beliefs was 5.212 (SD = 0.257; 95% Confidence Interval = 4.921 - 5.503) on the same Likert-scale.

Conspiracy belief item means (see Table 4.1) varied between 1.131 and 2.846, with the lowest adhered to conspiracy belief being belief 13 *("The virus is linked in 5G")* and the highest adhered to conspiracy belief being belief 3 *("The virus was made in a laboratory")*, closely followed by belief 1 *("The virus is as serious as the common flu, if not less so")* with a mean of 2.671.

Table 4.1: Response frequencies, means and standard deviations of participants' adherence to COVID-19 beliefs.

	Response Frequency (Percentage)								
Belief	Strongly Disagree (1)	Disagree (2)	Somewhat Disagree (3)	Neutral (4)	Somewhat Agree (5)	Agree (6)	Strongly Agree (7)	Mean	SD
1. The virus is as serious as the common flu, if not less so.	144 (25.9%)	187 (33.6%)	97 (17.4%)	41 (7.4%)	36 (6.5%)	29 (5.2%)	23 (4.1%)	2.7	1.7
2. The virus is a hoax.	450 (80.8%)	75 (13.5%)	9 (1.6%)	13 (2.3%)	4 (0.7%)	1 (0.2%)	5 (0.9%)	1.3	0.9
3. The virus was made in a laboratory.	143 (25.7%)	148 (26.6%)	47 (8.4%)	147 (26.4%)	29 (5.2%)	29 (5.2%)	14 (2.5%)	2.8	1.6
4. The virus is a biological weapon.	277 (49.7%)	144 (25.9%)	33 (5.9%)	70 (12.5%)	15 (2.7%)	8 (1.4%)	10 (1.8%)	2.0	1.4
5. COVID-19 cannot be passed from person to person, you can only get it if someone deliberately infects you with it (e.g. being injected or poisoned).	498 (89.4%)	44 (7.9%)	3 (0.5%)	5 (0.9%)	1 (0.2%)	3 (0.5%)	3 (0.5%)	1.2	0.7
6. The virus is produced and spread around the world by powerful people for their own purposes (e.g. to gain power, gain money).	418 (75.0%)	79 (14.2%)	22 (4.0%)	14 (2.5%)	11 (2.0%)	4 (0.7%)	9 (1.6%)	1.5	1.2
7. The virus is a front to implement measures to abolish our civil liberties.	417 (74.9%)	64 (11.5%)	20 (3.6%)	17 (3.1%)	18 (3.2%)	7 (1.3%)	14 (2.5%)	1.6	1.4

8. The virus is a deliberate attempt to reduce the size of the global population.	409 (73.4%)	97 (17.4%)	5 (0.9%)	21 (3.8%)	14 (2.5%)	3 (0.5%)	8 (1.4%)	1.5	1.2
9. The virus was caused by one nation wanting to destabilise another.	383 (68.8%)	104 (18.7%)	21 (3.8%)	37 (6.6%)	7 (1.3%)	2 (0.4%)	3 (0.5%)	1.6	1.1
10. COVID-19 was created to force everyone to get vaccinated.	458 (82.2%)	56 (10.1%)	3 (0.5%)	18 (3.2%)	7 (1.3%)	6 (1.1%)	9 (1.6%)	1.4	1.1
11. Big Pharma created coronavirus to profit from the vaccines.	429 (77.0%)	69 (12.4%)	12 (2.2%)	23 (4.1%)	11 (2.0%)	4 (0.7%)	9 (1.6%)	1.5	1.2
12. Antibody testing is a plot to harvest our DNA.	469 (84.2%)	57 (10.2%)	1 (0.2%)	18 (3.2%)	4 (0.7%)	5 (0.9%)	3 (0.5%)	1.3	0.9
13. The virus is linked to 5G.	517 (92.8%)	26 (4.7%)	7 (1.3%)	2 (0.4%)	1 (0.2%)	1 (0.1%)	3 (0.5%)	1.1	0.6
14. The COVID-19 vaccine contains microchips.	510 (91.6%)	30 (5.4%)	4 (0.7%)	6 (1.1%)	3 (0.5%)	0 (0%)	4 (0.7%)	1.2	0.7
Official Explanation (Reverse Item)									
1. There is no intentional plan of a person or a group behind the spreading of COVID-19 around the world.	57 (10.2%)	42 (7.5%)	13 (2.3%)	27 (4.8%)	30 (5.4%)	157 (28.2%)	231 (41.5%)	5.4	2.1
2. The virus is most likely to have started at a wet market (marketplace selling fresh meat, fish, produce, and other perishable goods) in China.	29 (5.2%)	22 (4.0%)	16 (2.9%)	129 (23.2%)	126 (22.6%)	174 (31.2%)	61 (11.0%)	4.9	1.5
3. The virus is naturally occurring.	14 (2.5%)	16 (2.9%)	24 (4.3%)	105 (18.9%)	87 (15.6%)	177 (31.8%)	134 (24.1%)	5.3	1.5

Endorsement scores for the conspiracy beliefs positively correlated with one another ($p < 0.001$), with the exception of belief 3 *("The virus was made in a laboratory")* and 5 *("COVID-19 cannot be passed from person to person, you can only get it if someone deliberately infects you wit hit (e.g. being injected or poisoned)")* ($p = 0.290$).

As to the endorsement scores for the official explanations, all items positively correlated with one another ($p < 0.001$ for the correlations with reverse item 2; $p = 0.015$ for the correlation between reverse item 1 and 3).

The endorsement scores for the conspiracy beliefs were all negatively correlated with the endorsement scores for the official explanations (all $p < 0.001$).

4.2.2 Conspiracy Mentality

When it comes to the five items that make up conspiracy mentality, the overall and individual item mean scores based on a 11-point scale system (ranging from 0 = *0% – certainly not* to 10 = 100% – *certain*) can be found in Table 4.2.

Table 4.2: Conspiracy Mentality means and standard deviations (combined as well as per item).

0% certainly not	10% extremely unlikely	20% very unlikely	30% unlikely	40% somewhat unlikely	50% undecided	60% somewhat likely	70% likely	80% very likely	90% extremely likely	100% certain

Conspiracy Mentality Questionnaire	Mean	SD
- Conspiracy Mentality (Items 1-5)	3.2	2.0
Items		
1. I think that many very important things happen in the world, which the public is never informed about.	5.0	2.8
2 I think that politicians usually do not tell us the true motives for their decisions.	4.9	2.6
3. I think that government agencies closely monitor all citizens.	2.7	2.5
4. I think that events which superficially seem to lack a connection are often the result of secret activities.	1.5	2.1
5. I think that there are secret organisations that greatly influence political decisions.	2.1	2.6

The mean score for conspiracy mentality for all participants was 3.2 (SD = 2.0), which on the scale most closely corresponds to *unlikely*. Of the 557 participants 92 (16,52%) people had a CM mean score of >5 which on the scale corresponds to scoring above *undecided*, whilst 65 (11,67%) people had a CB of ≥ 6 which on the scale corresponds to scoring above *somewhat likely*. Of the 92 participants that had a CB mean score of > 5 the mean score was 6,80 which on the scale borders on *likely*.

4.3 Adherence to COVID-19 Normative Prevention Measures and Conspiracy Thinking

The individual item mean scores concerning adherence to normative prevention measures based on a 5-point scale system (ranging from 0 = *Not at all* to 5 = *All the time*) can be found in Table 4.3.

Table 4.3: Response frequencies, means and standard deviations of participants' adherence to normative prevention measures.

	Response Frequency (Percentage)						
Normative Prevention Measure	Not at all (1)	Occasionally (2)	Some of the time (3)	Most of the time (4)	All of the time (5)	Mean	SD
1. I wear a facemask in public transport.	54 (9.7%)	18 (3.2%)	27 (4.8%)	90 (16.2%)	368 (66.1%)	4.3	1.3
2. I receive only the max. number of visitors at home.	74 (13.2%)	51 (9.2%)	123 (22.1%)	189 (33.9%)	120 (21.5%)	3.4	1.3
3. I wear a facemask in public indoor venues.	54 (9.7%)	22 (4.0%)	53 (9.5%)	153 (27.5%)	275 (49.4%)	4.0	1.3
4. I avoid crowded places.	59 (10.6%)	68 (12.2%)	131 (23.5%)	196 (35.2%)	103 (18.5%)	3.4	1.2
5. I work from home if possible.	71 (12.7%)	36 (6.5%)	73 (13.1%)	188 (33.8%)	189 (33.9%)	3.7	1.3
6. I stay at home with symptoms.	13 (2.3%)	17 (3.1%)	60 (10.8%)	159 (28.5%)	308 (55.3%)	4.3	0.9
7. I cough and sneeze into my elbow.	20 (3.6%)	10 (1.8%)	38 (6.8%)	161 (28.9%)	328 (58.9%)	4.4	1.0
8. I get tested with symptoms.	35 (6.3%)	37 (6.6%)	88 (15.8%)	190 (34.1%)	207 (37.2%)	3.9	1.2
9. I keep 1.5 meters distance.	35 (6.3%)	44 (7.9%)	109 (19.6%)	265 (47.6%)	104 (18.7%)	3.6	1.1
10. I self-test before visiting.	91 (16.3%)	91 (16.3%)	152 (27.3%)	149 (26.8%)	74 (13.3%)	3.0	1.3
11. I wash my hands often.	8 (1.4%)	32 (5.7%)	92 (16.5%)	244 (43.8%)	181 (32.5%)	4.0	0.9

12. I ventilate my home sufficiently.	9 (1.6%)	27 (4.8%)	121 (21.7%)	238 (42.7%)	162 (29.1%)	3.9	0.9
General Adherence items							
- How much will you follow future guidance from the government about coronavirus?	22 (4.0%)	50 (9.0%)	115 (20.6%)	310 (55.7%)	59 (10.6%)	3.6	0.9
- Overall how much do you follow guidance from the government about coronavirus?	12 (2.2%)	26 (4.7%)	81 (14.5%)	370 (66.4%)	68 (12.2%)	3.8	0.8

Mean adherence to all normative prevention measures was calculated by first averaging the adherence scores per participant, and then averaging across participants resulting in an overall mean of 3.832 (SD = 0.754; 95% Confidence Interval = 3.769 – 3.895) on the same Likert-scale, which most closely corresponds to '*most of the time'*. This result could be considered as 'moderately high' adherence. This closely resembled the self-perceived adherence rate by the participants (3.819), see Table 4.3.

Adherence means varied between 3.043 and 4.377, with the lowest adhered to normative prevention measure being measure 10 *("I self-test before visiting") and* the highest adhered to normative prevention measure being measure 7 *("I cough and sneeze into my elbow")*.

To answer the question whether holding specific COVID-19 conspiracy beliefs could predict adherence to normative prevention measures we correlated the means per participant of two measures, namely overall adherence to specific COVID-19 beliefs and to normative prevention measures. These two overall adherence measures resulted in a strong correlation of $r = -0.527$ ($p < 0.001$), see Figure 4.3. The individual correlations between the adherence of each specific COVID-19 belief and the normative prevention measures were all significant (all $r > -0.256$ with all $p < 0.001$).

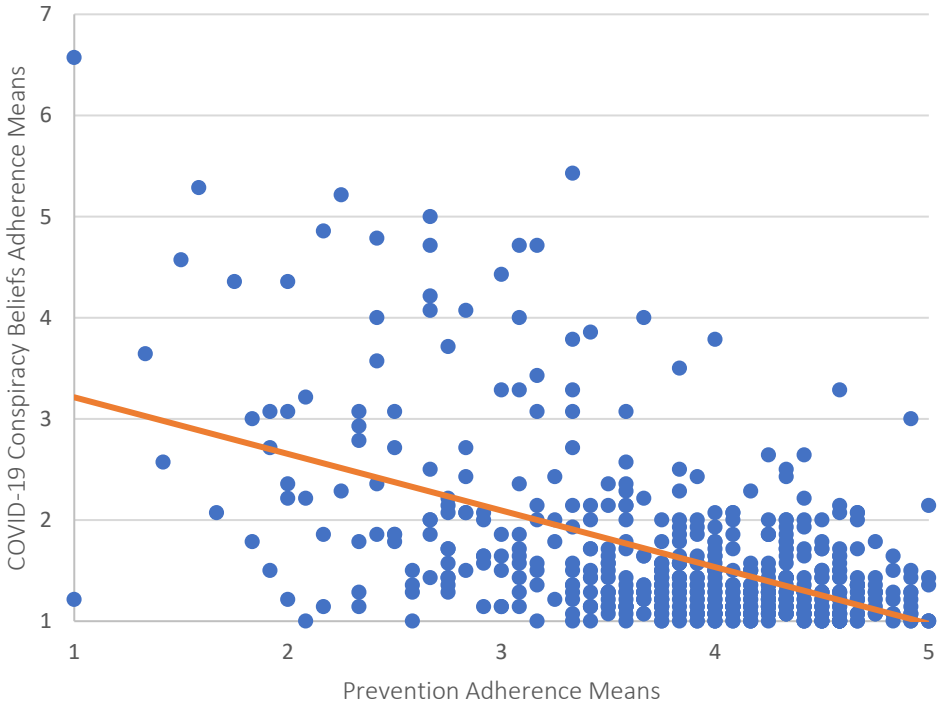


Figure 4.3: Scatter plot of overall adherence to specific COVID-19 beliefs and normative prevention measures.

Similarly, to answer the question whether conspiracy mentality could predict adherence to normative prevention measures we correlated the means per participant of two measures, namely conspiracy mentality and to normative prevention measures. These two measures resulted in a strong correlation of $r = -0.424$ ($p < 0.001$), see Figure 4.4.

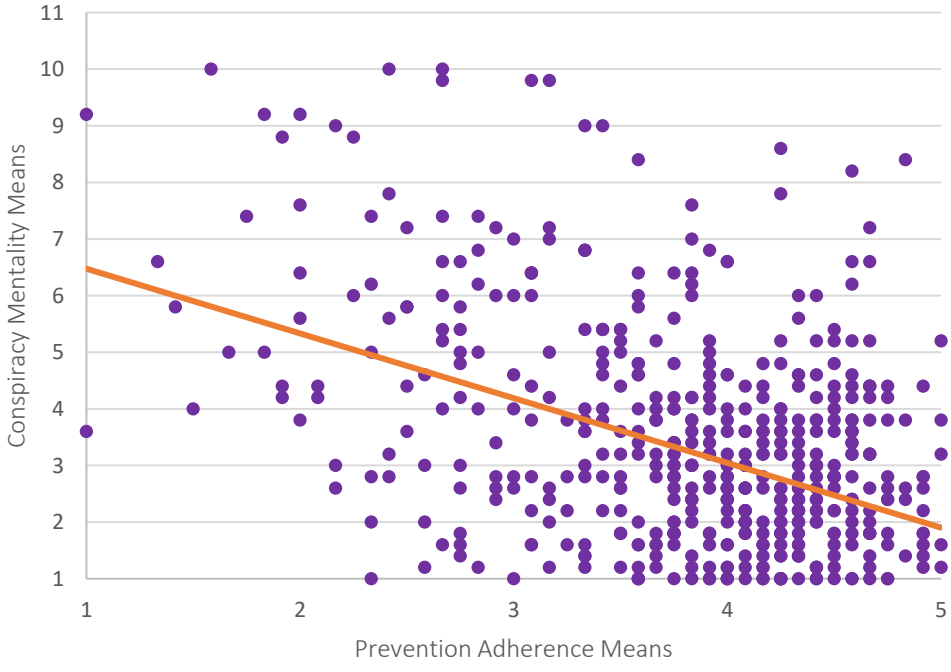


Figure 4.4: Scatter plot of conspiracy mentality and normative prevention measures.

4.4 Perceived Risk

Having built the regression models described in section 3.4, all models were found to be significant (all $p < .001$, ANOVA-tests). Additionally, running a Pearson's Correlation showed that PRP, GPRP and PRD were strongly correlated with each other (PRP x GPRP: $r = 0.661$, $p < .001$; PRP x PRD: $r = 0.454$, $p < .001$; GPRP x PRD: $r = 0.326$, $p < .001$).

Looking at the regression models concerning specific COVID-19 conspiracy beliefs, model 1 shows the base model of the relationship between said beliefs and adherence (to normative prevention measures), corresponding to the previous analysis concerning this correlation. Models 2a to 2c, concerning 'personal risk perception' (or *'PRP'*), perceived risk of contamination of the general population (or *'GPRP'*) and perceived risk of death (or *'PRD'*) separately, found that all three separate coefficients significantly contribute positively to the dependent variable of adherence. Looking at Table 4.4, based on the size of the coefficients as well as the proportion of the explained variance, it is clear PRP as well as GPRP play a larger role in moderating the relationship between specific COVID-19 conspiracy thinking and adherence than PRD does. Furthermore, model 3, which included all three coefficients in the same model, found only PRP and GPRP to be significant, whilst PRD was insignificant. Hence, when looking at the influence of all three risk perception factors combined with specific COVID-19 conspiracy beliefs, only PRP and GPRP still had a significant positive influence on adherence.

The same patterns occur in the regression models concerning conspiracy mentality. All three separate coefficients significantly contribute positively to the dependent variable of adherence in model 5a to 5c, where once again it is clear PRP as well as GPRP play a larger role in moderating the relationship between conspiracy mentality and adherence than PRD does, based on the size of the coefficients as well as the proportion of the explained variance (see Table 4.4). Finally, model 6 once again found only PRP and GPRP to be significant, whilst PRD was insignificant. Hence, when looking at the influence of all three risk perception factors combined with conspiracy mentality, only PRP and GPRP still had a significant positive influence on adherence.

Table 4.4: Regression models 1 – 6 predicting normative prevention measures adherence: showing R^2 and standardized coefficients (see §3.4 for description models).

		Standardized Coefficients (b)			
CM Models	R^2	CB	PRP	GPRP	PRD
1	0.277	-0.527*			
2a	0.439	-0.320*	0.452*		
2b	0.385	-0.394*		0.354*	
2c	0.338	-0.520*			0.246*
3	0.454	-0.319*	0.334*	0.145*	0.052
CB Models	R^2	CM	PRP	GPRP	PRD
4	0.180	-0.424*			
5a	0.412	-0.246*	0.513*		
5b	0.336	-0.304*		0.414*	
5c	0.250	-0.427*			0.265*
6	0.427	-0.241*	0.395*	0.161*	0.030

* = $p < .001$; no other coefficients were significant with $\alpha < 0.05$.

Interesting to note, looking back at the self-reported risk level for (severe) COVID-19 classification discussed in section 4.1, significant differences were found between the vulnerable (risk level high and very high combined, n = 85) and non-vulnerable people (n = 472) in their reported PRP ($t(555) = -4.49$, $p < .001$) and PRD ($t(555) = -10.00$, $p < .001$), whilst GPRP was insignificant ($t(555) = -1.54$, $p = 0.123$).

5. Conclusion

This study tried to validate previous findings concerning the mechanisms in regard to conspiracy thinking and adherence to COVID-19 safety- and isolation guidelines, as well as shed more light on the more ambiguous role of risk perception. Consequently, the main research question was 'How does conspiracy thinking explain people's prevention behaviour in the midst of a pandemic?'. This research question will be answered in this chapter by addressing all the sub-question mentioned at the end of the introduction. Furthermore, the study's limitations as well as potential future research and recommendations will be discussed.

5.1 Findings Summary

Adherence to COVID-19 specific conspiracy beliefs was generally low in the study population, with approximately 3 in 100 people generally adhering to COVID-19 specific conspiracy beliefs, of which approximately 1 in 100 people showing strong adherence to these beliefs. However, it must be noted that there was a large variation of adherence in the sample. Notably, more than 1 in 4 people adhered to at least one COVID-19 specific conspiracy belief. Meanwhile, it was also found that, for all but two COVID-19 specific conspiracy beliefs, believing one belief made it more likely someone would believe another. The adherence to a conspiracy mentality in the Netherlands could be considered generally low in the study population as well, as on average participants were unlikely to believe in general conspiracy statements. This study found however that approximately 1 in 9 people showed demonstrable signs of a conspiracy mentality. The participants self-reported adhering to the normative prevention measures across the board as 'most of the time'.

A strong relationship was found between this adherence to normative prevention measures and holding specific COVID-19 conspiracy beliefs. This relationship was also found with each COVID-19 specific conspiracy belief individually. Specifically, participants believing in COVID-19 conspiracy beliefs were less likely to adhere to normative prevention measures. A similarly strong relationship was found between the adherence to normative prevention measures and having a conspiracy mentality. Comparatively, participants with a strong conspiracy mentality were less likely to adhere to normative prevention measures. In the interplay between adherence to normative prevention measures and conspiracy mentality, risk perception was found to play a significant role. The same proved to be true for the interplay between said adherence and specific COVID-19 beliefs. When considering them individually, all three aspects of risk perception had a positive impact on the adherence to prevention

measures in both of these relationships. When considering all aspects together however it was found that personal risk perception and perceived risk of contamination of the general population were the only two aspects of risk perception that still had a positive influence on adherence levels, whilst perceived risk of death simply did not.

5.2 Prevalence of Conspiracy Thinking and Conspiracy Mentality

Of the relevant national studies only the English and Polish study published their actual numbers regarding the prevalence of conspiracy thinking. It is important to keep in mind however that the measuring instruments for conspiracy thinking between both the English and Polish study, as well as the Dutch study, all somewhat varied (see methodology). Nonetheless, compared to these two countries, the Netherlands had the lowest prevalence of conspiracy thinking. Compared to Poland's relatively low numbers when it came to people with high levels of endorsement (with the exception of conspiracies regarding the Polish government), the Dutch still ranked on the low end of their reported high endorsement range. Meanwhile, the Polish average prevalence of each conspiracy belief was twice as high. England however exceeded both the Netherlands and Poland, having far higher conspiracy thinking rates than either.

Unfortunately, comparisons regarding conspiracy mentality could not be made with either, as the English study did not publish their data on conspiracy mentality and the Polish study did not research this factor separately. Such comparisons were also impossible with the other national studies, either due to them not researching this factor separately or due to only reporting data on the interplay of factors surrounding adherence to prevention measures.
Looking back at the hypothesis made regarding conspiracy thinking, it is fair to say specific COVID-19 conspiracy rates were in general lower than expected, whilst the low to moderate projection regarding conspiracy mentality rates proved to be correct.

5.3 Prevalence of Adherence to Prevention Measures

The moderately high adherence scores found in this Dutch national survey resembled the adherence scores of Poland and England, these being moderately high to high (though scored with different measuring instruments). This is despite the fact that when looking at the levels of trust in their national government, the Netherlands scored much higher than all other relevant countries. Comparing the Dutch adherence scores to the other national surveys was impossible as the other studies did not published their adherence scores, but only reported their data regarding the interplay of factors surrounding adherence to prevention measures. Looking

back at this study's second hypothesis it could be considered as slightly erroneous, as the expectation was high adherence scores but it is only moderately high. It was hypothesised correctly that self-testing before visiting would be one of the prevention measure garnering lower adherence, however the other prevention measures expected to score low (washing hands often and ventilating homes sufficiently) scored moderately high instead. All in all, hypothesis 2 could be considered proven mostly correct, with only slight differentiations.

5.4 Conspiracy Thinking / Conspiracy Mentality and Adherence to Prevention Measures

When looking back at the study's theoretical framework it is possible to make some statements about where this study fits within the sphere of theory concerning the interplay between conspiracy thinking and prevention measures in the time of the COVID-19 pandemic. This study substantiates many a previous study by finding negative relationships between conspiracy thinking in general and health-related measures (see Alper et al., 2020, p.2). When looking at this type of relationship in the context of COVID-19, of the national studies included in this study's theoretical framework the most interesting to contrast and compare with are the ones who studied conspiracy thinking as well as adherence to prevention measures – namely the Turkish (Alper et al., 2020), English (Freeman et al., 2020), Polish (Kowalski et al., 2020) and French (Marinthe et al., 2020) national studies.

The Dutch study corroborates English and Polish national studies in finding a negative relationship with COVID-19 conspiracy beliefs and prevention behaviour (the French national study did not research COVID-19 specific conspiracy beliefs). This goes against the results of the Turkish national study however, which found said factors to be unrelated. Nevertheless, the Turkish study did find a small but positive correlation between conspiracy mentality and adherence to prevention measures. Consequently, when it comes to conspiracy mentality, the Dutch study corroborates the Turkish national study in finding a negative relationship with conspiracy mentality and prevention behaviour. This however does not fully line up with the French national study, which only found a correlation with 'extreme' normative prevention behaviour (namely self-isolation) but not with other forms of prevention behaviour. [2] Taken together, despite the above differences in the relevant national studies, this study did align with at least one or multiple elements in each of these studies in finding a negative relationship between either COVID-19 conspiracy thinking or conspiracy mentality and prevention

[2] The Polish national study did not research conspiracy mentality, whilst the English national study did not separately check this correlation but deemed conspiracy mentality a 'marker' of adhering to COVID-19 conspiracy beliefs.

behaviour. Furthermore, it proved the hypotheses 3a and 3b that this study set out to test, which expressed the expectation of finding a negative relationship between holding COVID-19 conspiracy beliefs as well as having a conspiracy mentality and adhering to normative prevention measures.

5.5 Risk Perception as a Moderator

Like the vast majority of studies before, the Dutch national survey also found risk perception as a concept to be associated with adherence to prevention measures (Alper et al., 2020, p.3; Kowalski et al., 2020; Marinthe et al., 2020). Furthermore, the Dutch study results suggest risk perception (or at least certain aspects of risk perception) can act as a moderator between said adherence to prevention measures and conspiracy thinking – a finding that corresponds with the Polish[3] and French national studies (Kowalski et al., 2020, p.6; Marinthe et al., 2020, p.972).

To fully grasp the Dutch national study results' position in the larger scheme of things however, it is necessary to look at 'personal risk perception', 'perceived risk of the contamination of the general population' and 'perceived risk of death' on their own as well as when all three of these aspects of risk perception are in play. The Polish, Turkish and French national studies were the only other national studies researching risk perception, of which only the French national study researched more aspects of said factor besides personal risk perception.

When it comes to personal risk perception all studies either found this factor to act as a moderator between conspiracy thinking and prevention measures or mentioned it as a distinct possibility. That is to say, the Turkish national study found no negative relationship between conspiracy thinking and prevention measures, as stated before, but it mentions personal risk perception as being an independent predictor of adherence to prevention measures and as a possible moderator that might have caused their null finding. Consequently the Dutch national study was very much in line with previous findings on personal risk perception.

When it comes to perceived risk of the contamination of the general population, the Dutch national study found positive results regarding the moderating of the relationship between conspiracy thinking and prevention measures. This consequently corresponded with many previous researches done on this topic mentioned in section 2.3.2 of the theoretical

[3] Important to note, the Polish national study used the concept of 'corona related anxiety' instead; though this 3-item instrument included a personal risk perception item (which is the data this study is referencing).

framework of this study. However the only other national study researching this factor in relation to conspiracy thinking in the COVID-19 pandemic, the French national study, did not share these same results.

Furthermore, when looking at the perceived risk of death aspect, the Dutch study found it to have a moderating effect on the relationship between conspiracy thinking and prevention measures on its own, but not when all three aspects of risk perception were in play. This also does not correspond with the French national study, which found risk of death to be the more relevant factor instead of risk of contamination of the general public.

Consequently, whilst this study confirmed the overall hypothesis that risk perception can function as moderator between conspiracy thinking and adherence to normative prevention measures, the hypothesis regarding the different aspects of risk perception has been proven incorrect. Instead of all of the three aspects or just risk of death and risk of personal contamination, the Dutch national study finds perceived risk of contamination of the general population and personal risk perception to be the two most influential aspects of risk perception.

5.6 Limitations

Most of the limitations regarding the reliability and validity of this study, like certain response biases and the use of adapted versions of the already existing instruments, have already been addressed adequately in section 3.5 of the methodology chapter. However, it is worth taking a further look at the potential selection bias the method of online sampling could have created. In the following paragraphs the sample characteristics age, gender, education, perceived socioeconomic status, ideology and religiosity will be analysed for overrepresentation.

Firstly, based on the sample demographics, the current survey most likely overrepresents Dutch citizens in their 20s and 30s, as the average age of the population of the Netherlands is 42.5 years old – in contrast, this survey found an average age of 33.4 years old whilst excluding participants below the age of 16. This may be due to the userbases of the websites used in recruiting participants being skewed towards a younger audience and/or may be because younger generations tend to use the internet more and were therefore more likely to come across the survey (Cimendag, 2022; Oosterveer, 2023). Secondly, regarding gender, the current sample overrepresents men with 60.5% being male compared to the country's male population of 49.7%, whilst only 38.1% was female in contrast to the 50.3% country's female population rate (with the remaining 1.4% of the sample being non-binary) (CBS, 2023c) Third,

people with a higher education were also vastly overrepresented in the current sample, as the group of people having completed high school or secondary vocational education as their highest education level made up almost 30% of the sample and the group of people having completed higher professional education or university made up almost 70% of the sample, whereas in the Dutch population these numbers are closer to being reversed (CBS, 2024). Fourth, although there is no real data to be found on perceived socioeconomic status of Dutch citizens, it is important to note that our sample largely rated their socioeconomic status average or above average. This suggests that people with higher income and status could be overrepresented in the sample. Fifth, when it comes to ideology the current sample was also skewed to the left, which doesn't fully match up with Dutch citizen's voting behaviour which is skewed towards the right (Dujic, 2023). Finally, the religiosity of the current sample was extremely skewed towards non-religiousness scoring a 1.8 on a 7 point-scale, consequently vastly underrepresenting religious people in the Netherlands since 43% of Dutch citizens are said to be religious (CBS, 2023d). All in all, some selection biases definitely occurred in the recruitment process which should be taken into account when interpreting the results of this study.

Meanwhile, a final few limitations of this research are worth mentioning. A primary limitation would be that this study's design with its cross-sectional nature precludes causal inference and/or inference about coincidence in time. As the English national study also explains, it is possible that feelings and thoughts around COVID-19 comes down to post hoc rationalising of not adhering to prevention measures (Freeman et al., 2020, p.13). However, based on the vast literature research, it is more likely that conspiracy thinking is the driving force when it comes to behaviour.

Another limitation is the likely possibility that there are more relevant factors and causal links than researched in this study. When deciding on what factors to include, the possible scope of this research had to be taken into account.

A final limitation is the focus on normative prevention measures only, which with the topic of conspiracy thinking might be considered limiting. However the decision of excluding non-normative prevention measures was based on first and foremost wanting to collect data that would be useful for any crisis management surrounding officially sanctioned prevention measures whilst, once again, trying to be as comparable as possible to the other national surveys. Furthermore certain non-normative prevention measures like, for example, the use of bleach as a treatment for COVID-19 seemed potentially harmful to include. As the French national study pointed out, including such non-normative prevention measures could

potentially be seen by participants as legitimizing such measures as treatment for COVID-19 (Marinthe et al., 2020, p.970).

5.7 Future Research and Recommendations

When it comes to future research and recommendations, first of all more duplications of this type of study in similar contexts and different countries would be very useful in bolstering the current existing research body on the mechanisms concerning conspiracy thinking and safety- and isolation guidelines during moments of crisis. Future research on a larger scale might have the resources to obtain a more suitable sample to represent the total population. Furthermore, future research on causal effects might also be able to include more potential relevant factors from previous research related to conspiracy thinking and prevention behaviours, such as paranoia-like beliefs, perceived socio-political place in society or (mis)trust in science, media and authorities.

Secondly, echoing some of the other national studies, addressing the limitation of inferring causality could potentially be done by future research on the relationship between conspiracy thinking and prevention behaviour of a longitudinal and/or experimental nature. Ideally such a longitudinal design would cover a period of time before, during and after an epidemic, when (conspiracy) beliefs and behaviour are studied. Meanwhile setting up an experimental study could be an expeditious option when it comes to providing more evidence of causality between conspiracy thinking and actual behaviour.

Finally, the discrepancies between the Dutch and French national studies and the existing research body as a whole makes risk perception still an interesting factor to further research. Like the French national study argues, an experimental study could be an interesting way to research the effects of risk perception more thoroughly (Marinthe et al., 2020, p.971).

As stated before, the findings regarding risk perception are important as they could provide valuable insights in how to increase the adoption of safety- and isolation guidelines amongst the – more reluctant – members of the public. Based on the findings of this research, a fitting recommendation for the crisis management sector would be to focus on ‘personal risk perception’ and ‘perceived risk of contamination of the general population’ when trying to convey the importance of adherence to normative prevention measures, and less so on ‘risk of death’.

Whilst this study cannot give more practical recommendations, it has succeeded in the aim to contribute another national overview to the existing research body on the mechanisms concerning the adherence to (COVID-19) safety measures and conspiracy thinking, which can hopefully help tackle practical problems in the times of pandemics in the future.

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Appendix A: Survey (English version)

Thank you very much for wanting to participate in this research! The subject of this research is conspiracy theories in times of COVID-19. Below a short introduction:

A conspiracy theory is a theory that provides an alternative explanation to the established understanding of a historical or current event. Often, it is claimed that this event is the result of conscious manipulations by individuals or secretive powers. Due to our incomplete knowledge about the world, it cannot always ultimately be decided which explanatory model is more true - the established understanding of an event or the respective conspiracy theory.

Conspiracy theories are part of our everyday lives – circulated through direct discussions with others, newspapers and magazines, TV, the internet, and other (social) media. People either believe in them or reject them. During the COVID-19 pandemic many a conspiracy theory circulated. In this short questionnaire, we are interested in the extent to which **you personally** believe in conspiracy theories concerning COVID-19. We are also interested in your personal experience when it comes to the (previously) imposed prevention measures and any worries you might have (had) concerning COVID-19.

For your protection, the following study has been ethically tested and approved by the programme director of the Crisis and Security Management programme at Leiden University, where this research is based. This research is being undertaken as part of a student's master thesis. If you have questions or concerns about any aspect of this project or its technical operation, please mail S. Ros.

Starting the questionnaire below is evidence that you have read and understood the following and agree to it:

- Your participation in the study will involve answering a questionnaire on conspiracy theories and your experience during the COVID-19 pandemic. Completion will take 5 to 10 minutes.
- Your participation is entirely voluntary, you may abort this questionnaire at any time.
- You must be 16 years or older to participate.
- The information provided by you will be held totally anonymously and you will not be identified in any format of this research. This ensures the highest level of protection for the information that you choose to share and implies that you cannot withdraw any answers that end up being submitted.[4]

[4] The introducing text of the survey heavily sources the introduction of a similar survey on conspiracy beliefs by Bruder (n/d), from the School of Psychology at Cardiff University.

Instrument 1 – Sociodemographic Factors

Age (in years)
Gender (male, female, other)
Highest completed education (1 = less than elementary school, 2 = elementary school, 3 = high school, 4 = secondary vocational education, 5 = higher professional education, 6 = university, 7 = PhD)
Perceived socioeconomic status (measured on a socioeconomic status ladder; 1 = the bottom of the ladder, … 10 = the top of the ladder)
Ideology (1 = strongly left wing, … 7 = strongly right wing)
Religiosity (1 = not religious at all, … 7 = very religious)
At higher risk for (severe) COVID-19 (1 = not high risk, 2 = high risk, 3 = very high risk)

Instrument 2 – Conspiracy Mentality

Conspiracy Mentality Questionnaire (CMQ)

Instruction For each statement, please indicate how much you agree by selecting an appropriate percentage. Remember that there are no "objectively" right or wrong answers for this survey and that we are interested in your personal opinion.

I think that…

1 … many very important things happen in the world, which the public is never informed about.
2 … politicians usually do not tell us the true motives for their decisions.
3 … government agencies closely monitor all citizens.
4 … events which superficially seem to lack a connection are often the result of secret activities.
5 … there are secret organisations that greatly influence political decisions.

0% certainly not	10% extremely unlikely	20% very unlikely	30% unlikely	40% somewhat unlikely	50% undecided	60% somewhat likely	70% likely	80% very likely	90% extremely likely	100% certain

Instrument 3 – Belief in Specific COVID-19 Conspiracy Theories

Instruction For each statement, please choose the answer that fits you most accurately. Remember that there are no "objectively" right or wrong answers for this survey and that we are interested in your personal opinion.

(The given options to choose from were (1) strongly disagree, (2) disagree, (3) somewhat disagree, (4) neutral, (5) somewhat agree, (6) agree, (7) strongly agree.)

The virus is as serious as the common flu, if not less so.
The virus is a hoax.
There is no intentional plan of a person or a group behind the spreading of COVID-19 around the world.
The virus was made in a laboratory.
The virus is a biological weapon.
The virus is most likely to have started at a wet market (marketplace selling fresh meat, fish, produce, and other perishable goods) in China.
COVID-19 cannot be passed from person to person, you can only get it if someone deliberately infects you with it (e.g. being injected or poisoned).
The virus is produced and spread around the world by powerful people for their own purposes (e.g. to gain power, gain money).
The virus is a front to implement measures to abolish our civil liberties.
The virus is naturally occurring.

The virus is a deliberate attempt to reduce the size of the global population.
The virus was caused by one nation wanting to destabilise another.
COVID-19 was created to force everyone to get vaccinated.
Big Pharma created coronavirus to profit from the vaccines.
Antibody testing is a plot to harvest our DNA.
The virus is linked to 5G.
The COVID-19 vaccine contains microchips.

Instrument 4 – Adherence to COVID-19 normative prevention measures

Instruction For each statement, please indicate how much you adhered to the following prevention measures. **Please think back to the last period of time these prevention measures were in force.**

(The given options to choose from were (1) not at all, (2) occasionally, (3) some of the time, (4) most of the time, (5) all of the time.)

Overall how much do you follow guidance from the government about coronavirus?
I wear a facemask in public transport.
I receive only the max. number of visitors at home.
I wear a facemask in public indoor venues.
I avoid crowded places.
I work from home if possible.
I stay at home with symptoms.
I cough and sneeze into my elbow.
I get tested with symptoms.
I keep 1.5 meters distance.
I self-test before visiting.
I wash my hands often.
I ventilate my home sufficiently.

Instruction For this statement, please indicate the answer that fits you most accurately.

How much will you follow future guidance from the government about coronavirus?

(The given options to choose from were (1) not at all, (2) occasionally, (3) some of the time, (4) most of the time, (5) all of the time.)

Instrument 5 – Perceived Risk

Instruction For each statement, please indicate the answer that fits you most accurately. **Please think back to your attitudes and possible worries during the COVID-19 pandemic.**

(*The given options to choose from were (1) strongly disagree, (2) disagree, (3) somewhat disagree, (4) neutral, (5) somewhat agree, (6) agree, (7) strongly agree.)*

The problem of COVID-19 is serious to me.
I am worried that I will be affected by COVID-19.
It is likely I will be affected by COVID-19.
I have felt that COVID-19 is dangerous.
I am worried the people around me will be affected by COVID-19.
I am worried that if I get infected by COVID-19 I will die.

This is the end of the questionnaire!
Click on ‘send’ to send in the questionnaire.

End of Questionnaire page

Thank you for completing this questionnaire!

As mentioned, this research is non-judgemental in the sense that it does not try to decide whether it is right or wrong, good or bad to endorse conspiracy theories. It is simply intended to find links between the endorsement of conspiracy theories, prevention behaviour and potential worries regarding the COVID-19 virus. All of this can provide us with greater understanding of these topics as it links back to larger topics of academic interest like crisis management, trust in public institutions and individual meaning finding.

As stated before if you have questions or concerns about any aspect of this project or its technical operation, please e-mail S. Ros.

Thank you for your time!

Appendix B: Survey (Dutch version)[5]

Hartelijk dank voor het mee willen doen aan dit onderzoek! Het onderwerp van dit onderzoek is complottheorieën in de tijd van corona. Hieronder een korte introductie:

Een complottheorie is een theorie die een alternatieve uitleg geeft voor de algemeen geaccepteerde verklaring van een historische of hedendaagse gebeurtenis. Het wordt vaak gesteld dat deze gebeurtenis het resultaat is van bewuste manipulaties door individuen of door geheime machten. Vanwege onze onvolledige kennis over de wereld kan niet altijd worden uitgemaakt welk verklaringsmodel het meest waarheidsgetrouw is – de algemeen geaccepteerde verklaring van een gebeurtenis of de respectievelijke samenzweringstheorie.

Complottheorieën maken deel uit van ons dagelijks bestaan – circuleren via directe discussies met anderen, kranten en tijdschriften, TV, het internet en andere (sociale) media. Mensen geloven erin of wijzen ze af. Gedurende de coronapandemie circuleerden er veel complottheorieën. Wij zijn geïnteresseerd in de mate waarin **u persoonlijk** in complottheorieën over corona gelooft, en daarom hebben we deze korte vragenlijst opgesteld. We zijn ook geïnteresseerd in uw persoonlijke ervaringen met de (eerder) opgelegde preventiemaatregelen, en eventuele zorgen die u heeft of gehad heeft betreffende corona.

Voor uw bescherming hebben de onderzoekers dit onderzoek ethisch getest en het is goedgekeurd door de opleidingsdirecteur van het Crisis and Security Management programma aan de Universiteit Leiden, waar dit onderzoek uitgevoerd wordt. Dit onderzoek wordt gedaan als onderdeel van een studentes master scriptie. Als u vragen of zorgen heeft over enig aspect van dit project of de technische uitvoering ervan, kunt u mailen met S. Ros.

Door te starten met de vragenlijst geeft u aan dat u het volgende hebt gelezen en begrepen en dat u hiermee akkoord gaat:

- uw deelname in de studie bestaat uit het beantwoorden van een vragenlijst over complottheorieën, en uw ervaringen gedurende de coronapandemie. Het invullen van de vragenlijst neemt 5 tot 10 minuten in beslag.
- uw deelname is geheel vrijblijvend; u kunt op elk moment de vragenlijst stoppen.
- u moet 16 jaar of ouder zijn om deel te kunnen nemen.
- de door u verstrekte informatie zal volledig anoniem worden bewaard en u zult in geen enkele vorm van dit onderzoek worden geïdentificeerd. Dit garandeert het hoogste niveau van bescherming van de informatie die u verkiest te delen. Tevens houdt het in dat u geen antwoorden kunt intrekken die uiteindelijk worden ingediend.

Meetinstrument 1 – Sociaal demografische factoren

Leeftijd (in jaren)
Geslacht (man, vrouw, anders)
Hoogste afgeronde opleiding (1 = minder dan basisschool; 2 = basisschool; 3 = middelbare school; 4= MBO, 5= HBO, 6= WO, 7= PhD)
Veronderstelde sociaaleconomische status (gemeten op sociaaleconomische statusladder, waarbij 1 = onderste tree van de ladder, ... 10 = bovenste tree van de ladder)
Politieke overtuiging (1 = sterk links, ... 7= sterk rechts)
Religie (0 = niet religieus, … 6 = zeer religieus)

[5] The survey has been translated into Dutch by M.M. Branger, a professional translator of 16 years.

Risico niveau voor (ernstige) corona (1 = niet hoog; 2 = hoog; 3 = zeer hoog risico)

Meetinstrument 2 – Complot mentaliteit

Instructie Geef voor elke stelling aan in hoeverre u het ermee eens bent door een passend percentage te kiezen. Vergeet niet dat er voor deze enquête geen "objectief" goede of foute antwoorden zijn en dat wij geïnteresseerd zijn in uw persoonlijke mening.

Ik denk dat ...

1. ... in de wereld veel belangrijke dingen gebeuren, waar het publiek nooit over wordt verteld.
2. ... politici ons meestal niet de ware motieven vertellen voor hun beslissingen.
3. ... overheidsinstanties alle burgers nauwlettend in de gaten houden.
4. ... gebeurtenissen die op het eerste gezicht geen verband lijken te hebben, vaak het resultaat zijn van geheime activiteiten.
5. ... er geheime organisaties zijn die grote invloed hebben op politieke beslissingen.

0% niet waar	10% hoogst onwaarschijnlijk	20% heel onwaarschijnlijk	30% onwaarschijnlijk	40% enigszins onwaarschijnlijk	50% Onbeslist	60% enigszins waarschijnlijk	70% waarschijnlijk	80% heel waarschijnlijk	90% hoogst waarschijnlijk	100% waar

Meetinstrument 3 – Geloof in specifieke complottheorieën over corona

Instructie Kies voor elke stelling het antwoord dat voor u het beste past. Vergeet niet dat er voor deze enquête geen "objectief" goede of foute antwoorden zijn en dat wij geïnteresseerd zijn in uw persoonlijke mening.

Het coronavirus is even ernstig als de gewone griep, zo niet minder ernstig.
Het coronavirus is hoax.
Er is geen opzettelijk plan van een persoon of een groep achter de verspreiding van het coronavirus over de wereld.
Het coronavirus is in een laboratorium gemaakt.
Het coronavirus is een biologisch wapen.
Het coronavirus is hoogstwaarschijnlijk ontstaan op een Chinese versmarkt, een zogenaamde wet market. Dit is een markt waar vers vlees, vis, groente en andere bederfelijke waar wordt verkocht.
Het coronavirus kan niet van mens tot mens worden overgedragen; je kunt alleen besmet worden als iemand je bewust ermee besmet (b.v. door je ermee te injecteren of vergiftigen).
Het coronavirus is geproduceerd en over de wereld verspreid door machtige mensen voor hun eigen doeleinden (b.v. om macht te verwerven, geld te verdienen).
Het coronavirus is een dekmantel om maatregelen te implementeren om onze burgerlijke rechten af te schaffen.
Het coronavirus komt van nature voor.
Het coronavirus is een doelbewuste poging om de wereldbevolking in te krimpen.
Het coronavirus is teweeg gebracht door een natie die een andere natie wilde destabiliseren.
Het coronavirus werd gecreëerd om iedereen te dwingen zich te laten vaccineren.
Big Pharma creëerde het coronavirus om te profiteren van de vaccins.
Antistoffen testen is een complot om ons DNA te oogsten.
Het coronavirus is verbonden met 5G.
Het vaccin tegen coronavirus bevat microchips.

Meetinstrument 4 – Naleving van normatieve coronapreventiemaatregelen

Instructie Geef voor elke stelling aan in hoeverre u zich aan de volgende voorzorgsmaatregelen hield. **Denk bij het invullen terug aan de laatste periode dat deze preventiemaatregelen van kracht waren.**

In welke mate volgt u over het algemeen de richtlijnen van de overheid over het coronavirus?
Ik draag een gezichtsmasker in het openbaar vervoer.
Ik ontvang alleen het maximumaantal bezoekers thuis.
Ik draag een gezichtsmasker in openbare binnenlocaties.
Ik vermijd drukke plaatsen.
Ik werk thuis indien mogelijk.
Ik blijf thuis met symptomen.
Ik hoest en nies in mijn elleboog.
Ik laat me testen als ik symptomen heb.
Ik hou 1,5 meter afstand.
Ik doe een zelftest voor ik op bezoek ga.
Ik was vaak mijn handen.
Ik ventileer mijn huis genoeg.

Instructie Kies voor deze stelling het antwoord dat voor u het beste past.

In hoeverre zult u de toekomstige richtlijnen van de overheid over het coronavirus volgen?

Meetinstrument 5 - vermeende risico's

Instructie Kies voor elke stelling het antwoord dat voor u het beste past. **Denk bij het invullen terug aan uw houding en eventuele zorgen gedurende de coronapandemie.**

Ik vind het coronaprobleem ernstig.
Ik ben bang dat ik corona zal krijgen.
Het is waarschijnlijk dat ik corona zal krijgen.
Ik heb het gevoel dat corona gevaarlijk is.
Ik ben bang dat mensen om mij heen corona zullen krijgen.
Ik ben bang dat als ik corona krijg dat ik zal sterven.

Dit is het einde van de vragenlijst!
Klik op versturen om de vragenlijst te verzenden.

Eindpagina Vragenlijst

Heel hartelijk dank voor het invullen van deze vragenlijst!
We benadrukken dat dit onderzoek niet-oordelend is in de zin dat het niet probeert te beslissen of het goed of fout, goed of slecht is om complottheorieën te onderschrijven. Het is alleen onze bedoeling verbanden te vinden tussen het onderschrijven van complottheorieën, preventiegedrag en mogelijke bezorgdheid over het coronavirus. Dit alles kan ons een beter inzicht verschaffen in deze onderwerpen, aangezien het verband houdt met grotere onderwerpen van academisch belang, zoals crisisbeheer, vertrouwen in overheidsinstellingen en het vinden van individuele zingeving.
Zoals gezegd: als u vragen of zorgen heeft over enig aspect van dit project of de technische uitvoering ervan, kunt u mailen met S. Ros.
Hartelijk dank voor de genomen moeite!