

Trust, Information, and COVID-19 Conspiracy Theories: Cross-Cultural Implications for Crisis Management and Public Health

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Abstract

This cross-cultural study analyzes responses from 402 individuals in Iran, Russia, and Germany to investigate the relationships between public trust in government, perceived freedom of information, and COVID-19 conspiracy theories. Significant relationships are identified between government trust, information freedom, and belief in COVID-19 conspiracy theories, particularly those alleging government involvement with the virus. This study demonstrates that diminished trust and limited access to information can fuel false beliefs, impeding public health initiatives. The article discusses the implications, highlighting the importance of trust and reliable information during crises such as the COVID-19 outbreak. It illustrates how government actions can restore trust, disseminate accurate information, and combat misinformation. This research illuminates the relationship between trust, information, and public beliefs during health crises, highlighting the need for proactive government involvement to combat conspiracy theories and promote rational decision-making for public health and safety.

Keywords: COVID-19; Vaccination; Conspiracy Theories; Pandemic.

Introduction

In the annals of history, the COVID-19 pandemic will be etched not only as a relentless threat to public health but also as a stark illuminator of the intricate tapestry of human psychology, societal dynamics, and the nuanced interplay between trust and information in our modern world. Simultaneously with the rapid escalation of the crisis, an equally contagious and pernicious phenomenon emerged: misinformation and false convictions (Porter, Velez, and Wood, 2023). To unravel the mystery of conspiracy theories regarding COVID-19, this scholarly article conducted a comprehensive survey focusing on three crucial determinants: trust in government, belief in unrestricted information flow, and political competence. During a public health emergency, these elements provide the context within which public perceptions coalesce, and convictions are formed. This investigation is more intriguing because of the paradoxical relationship between these factors and the proliferation of conspiracy theories.

The consequences of misinformation during a public health emergency are profound. Conspiracy theories can potentially compel individuals to make decisions that endanger their own well-being and undermine the concerted effort to curb the spread of the virus (Sabzali et al., 2022). Understanding the intricate relationship between trust, the availability of reliable information, and political competence transcends the realm of

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academic inquiry; it is essential for effective public health communication and policymaking. The formidable challenges posed by the COVID-19 pandemic have been astutely identified and exhaustively researched. Bavel et al. (2020) have elucidated that the COVID-19 pandemic is a monumental global health crisis, necessitating significant behavioral changes and imposing significant psychological stressors on individuals. To align human actions with the recommendations of epidemiologists and public health experts, it is subsequently necessary to utilize insights from the social and behavioral sciences.

In their comprehensive discourse, Bavel et al. delved into various research areas germane to pandemics. These included investigations into the management of threats, the impact of social and cultural factors on behavior, the nuances of effective science communication, ethical decision-making, leadership dynamics, and strategies for resilience and coping mechanisms during times of elevated stress. In each of these areas, the authors acknowledged the characteristics and quality of prior research while also acknowledging the presence of uncertainties and unanswered questions. Their scholarly investigation yielded numerous valuable insights that have the potential to improve the efficacy of COVID-19 pandemic responses. In addition, they highlighted the urgent research gaps that academics must address in these difficult times.

Lovari (2020) conducted a comprehensive investigation into the dissemination of false information regarding COVID-19 and the Italian government's intervention. The study investigates the politicization of health-related issues and the increasing use of social media platforms in the fight against the Coronavirus "infodemic" against the backdrop of Italy's recent experience with a progressive erosion of trust in its public institutions and a pervasive state of information crisis, particularly in the realm of health and science. In response to these challenges, the Italian Ministry of Health has assumed a central role, strategically employing its official Facebook page to combat the spread of misinformation and provide regular updates to the online population.

This prompt action has significantly increased the visibility and credibility of public health communication. Nonetheless, it is evident that coordinated efforts involving numerous institutions, media outlets, and digital platform companies are required. According to Lovari, such collaborative efforts are essential for mitigating misinformation's devastating effects. Adopting a multi-channel communication strategy emerges as a crucial method for preventing the escalation of social and technological disparities, which frequently intensify during times of crisis.

Bunker et al. (2020) conducted a study that illustrates how the past decade has been marked by significant digital disruption due to developments in centrally managed communication platforms such as Twitter and Facebook, the emergence of service-oriented platforms such as Uber and Airbnb, the dominance of search engines and data aggregation carried out by entities such as Google, and the widespread adoption of data analytics and artificial intelligence. The study argues that platform providers have constructed individual user profiles to profit from tracking, predicting, exploiting, and influencing user preferences and behavior in this rapidly evolving environment. At the same time, product and service providers have revised their business models to more precisely target prospective customers.

This tension between control versus openness within the context of platform leadership in recent decades echoes a similar tension on a broader scale over the future of the online landscape as a whole. As discussed by Masoumifar (2022), debates over so-called "cyber sovereignty" reveal tensions between models favoring openness and multi-stakeholder governance versus state control. Information environments shaped by these disputes in turn influence public attitudes. In authoritarian contexts where states increasingly censor online content, trust in government as an information source becomes complicated. Furthermore, while belief in freedom of information can empower citizen scrutiny, it also

risks enabling misinformation to spread through social media “echo chambers” and propaganda. This complex interplay between openness and control underscores the urgency of investigating the nuanced relationships between trust, information availability, and the competency of political authorities in managing emerging technologies.

While this digital disruption era has brought numerous social and economic benefits, it has also contributed significantly to the erosion of mental model alignment and shared situational awareness. This deterioration is exacerbated by the propagation of false information, characterized by the reinforcement of divergent mental models by recommender algorithms, automated bots, and influential platform users, also known as “influencers.” Bunker argues that to mitigate this digital decay process, novel methods and approaches to the centralized management of these platforms must be developed. These methods should foster confidence in the actors utilizing these platforms and, by extension, in the mental models they represent.

Our research efforts have shifted to a relatively uncharted area in light of the extensive body of literature concerning the spread of false information about COVID-19. The primary objective of our survey-based study is to shed light on the complex web of human behavior and the emergence of beliefs. In the context of the COVID-19 pandemic, we focus our investigation specifically on the repercussions of these dynamics on public health outcomes.

This study has the potential to enhance our understanding of the factors that have contributed to the erosion of trust in official medical institutions. This phenomenon has regrettably resulted in avoidable deaths. In addition, our research aims to provide valuable guidance for developing effective strategies to combat misinformation during future health emergencies. The response to a global health crisis is not solely determined by scientific progress and medical knowledge, as our study demonstrates. Equally influential are the complex relationships between trust, the free flow of information, and political competence on the global stage.

Literature Review

For Bunker, the global ‘infodemic’ caused by the COVID-19 pandemic in 2020 is a vivid illustration of the pressing challenges facing the information systems field. Amid this era characterized by profound digital disruption, it is essential to devise viable solutions for protecting the integrity of information dissemination and harmonizing mental models.

Melki et al. (2021) conducted a cross-sectional researcher-administered phone survey among adults residing in Lebanon from March 27 to April 23, 2020, to examine the complex relationship between news exposure and trust and the belief in COVID-19 conspiracy theories spread via social media. Their study included a diverse sample of 56.1% males and 43.9% females, 37.9% of whom held a university degree, 63.0% were over 30, and 7% received media literacy training.

The investigation uncovered numerous significant findings. Those who trusted COVID-19 information disseminated via social media [95% confidence interval (CI): (1.05–1.52)], as well as those who exhibited confidence in information received through interpersonal communication [95% CI: (1.25–1.82)] and clerics [95% CI: (1.25–1.82)], exhibited a greater tendency to believe in COVID-19 myths and misinformation. In contrast, those with university degrees [95% CI: (0.25–0.51)] and those who trusted government-provided information [95% CI: (0.65–0.89)] were less likely to endorse these misconceptions and false information. Additionally, individuals who believed COVID-19 myths and false information were less likely to engage in critical social media posting [95% CI: (0.25–0.70)]. Notably, individuals who had received media literacy training [95% CI: (1.24–6.55)] were more likely to engage in critical social media posting practices.

In conclusion, the study found that higher levels of education and trust in government sources reduce the prevalence of COVID-19 myths and conspiracy theories. In contrast, trust in social media, interpersonal communication, and religious authorities is associated with a greater belief in these inaccuracies. This, in turn, results in a decline in critical posting practices on social media, which exacerbates the spread of misinformation and contributes to the infodemic. Encouragingly, the study highlighted the positive role of media literacy training, which improved critical social media posting practices and thus played a crucial role in combating the infodemic.

Kanozia and Arya (2021) conducted a comprehensive literature review on the intersection of fake news, religion, and COVID-19 vaccine reluctance in India, Pakistan, and Bangladesh. Their research yielded crucial insights, highlighting the necessity for government and health authorities to maintain vigilant efforts against anti-vaccine campaigns. Particularly in regions characterized by elevated illiteracy rates and socioeconomic disparities, ensuring essential services to facilitate equitable vaccine access for vulnerable populations is paramount.

In addressing the issue of vaccine hesitancy, media outlets should adhere to enhanced reporting standards and strongly emphasize the dissemination of accurate information regarding the negative consequences of vaccine hesitancy and the tangible benefits of COVID-19 vaccination. A balanced approach should be maintained when reporting incidents such as fatalities or adverse effects that may not be definitively linked to vaccines.

National media outlets that spread misinformation or disinformation about the virus or vaccines must be condemned unequivocally. A foundation of transparency and disseminating exhaustive and verifiable information about the virus and vaccines is essential for assuaging the public's fears and doubts. Therefore, government entities are strongly encouraged to prioritize the continuous dissemination of current information regarding COVID-19 vaccines.

To effectively address public concerns, public health authorities should establish dedicated communication helplines that allow individuals to express their apprehensions and uncertainties about vaccines while receiving pertinent and evidence-based guidance. This proactive approach facilitates the cultivation of trust and encourages the population to make informed decisions.

Gisoni et al. (2022) conducted a comprehensive evaluation of the roles and responsibilities of social media companies in combating the COVID-19 infodemic. The researchers investigated the origins of misinformation about the virus within the realm of social media, acknowledging the scientific community's initial reluctance to combat the spread of false information. Therefore, the authors emphasized the need for social media companies to take more decisive and effective measures to address and mitigate the COVID-19 infodemic, with a clear emphasis on their legal and ethical responsibilities.

The study's conclusion rang out as a resounding call to action to social media companies, imploring them to establish more robust partnerships with influential figures within communities and experts in implementation science. This partnership is viewed as a crucial tactic in the fight against the relentless spread of COVID-19 misinformation.

In addition to this call to action, the authors provided a list of suggestions for readers to consider, outlining the essential steps necessary in the ongoing fight against COVID-19 misinformation. They emphasized the indispensable role that social media companies must play in this endeavor, thus emphasizing the urgency of this collective effort to protect the accuracy and integrity of information dissemination during the pandemic.

The study by Marco-Franco et al. (2021) provided a comprehensive analysis of critical issues surrounding the implementation of mandatory COVID-19 vaccination policies and, the role of misinformation, especially when disseminated by healthcare professionals, and

citizen attitudes toward such measures. The findings, gleaned from a number of surveys, revealed a prevalent degree of vaccine hesitancy rather than outright opposition, with fear of potential side effects associated with COVID-19 vaccination being the primary concern.

On the other hand, digital platforms have provided a venue for people to make active participation which can serve to “enhance political efficacy, shape narratives and serve as a precursor to more substantial engagement” (Zohouri, Darvishi & Sarfi, 2020, P.185). However, as Zohouri and his colleagues indicated it's crucial to acknowledge the limitations of superficial involvement, such as liking posts or sharing hashtags. While these actions may create an illusion of activism, they often lack substantial impact.

Both the enforcement of mandatory vaccination and government intervention to regulate misinformation are viable options within the legal frameworks of Spain and Europe, supported by existing legal provisions that could be strengthened through legislative amendments. However, the authors, under the leadership of Marco-Franco, advocated for the necessity of public legitimacy when implementing such measures. Instead of pursuing mandatory COVID-19 vaccination, they advocated an approach based on education and disseminating accurate information to persuade the population of the tangible benefits of voluntary vaccination.

In addition to discussing constructive disagreements among healthcare professionals, the study emphasized the importance of resolving such disputes by adhering to established ethical codes and best practices. In addition, the authors emphasized that citizens oppose direct government control over news dissemination. Instead, they advocated for collaboration between government entities, media outlets, and other organizations to ensure the responsible and accurate dissemination of information to the public.

Research Hypotheses

This study classifies its hypotheses into three distinct groups, each corresponding to a particular category of variables. Consequently, the following hypotheses have been formulated:

H1. A statistically significant inverse relationship exists between "people's trust in the government" and "false beliefs about COVID-19."

H2. There is a statistically significant inverse relationship between "the intensity of belief in the existence of free information flow in society" and "false beliefs about COVID-19."

H3. A statistically significant correlation exists between "people's media consumption" and "false beliefs about COVID-19."

In our study, we departed from the use of standard tests because the variables were developed based on researcher-designed hypotheses using a specially designed method. The dependent variable among the four groups of investigated variables was "false beliefs about COVID-19."

During the escalation of the pandemic in Iran, we conducted an exhaustive investigation by scouring public groups on Instagram and WhatsApp. We utilized thematic analysis to sift through a vast array of messages in these public groups, compiling a list of COVID-19 misinformation. From this list, we subsequently compiled a collection of false information items. Items that exhibited overlap with other items or proved challenging to comprehend, particularly for certain population segments, were deliberately omitted. Finally, we chose eight distinct false beliefs from among the most prevalent misinformation for our study.

1. There is no such thing as the COVID-19 virus; a new variant of past viruses has emerged.

2. COVID-19 is real, but it is not as dangerous as they claim.
3. COVID-19 is a man-made virus that has been produced intentionally [there is no definitive information about it, so understanding it as a certainty is incorrect. Moreover, this belief can conflict with confidence in official scientific institutions (the subject of this study)].
4. The COVID-19 virus was manufactured and disseminated on purpose for specific purposes.
5. The COVID-19 virus was deliberately created by unseen hands in order to achieve secret goals.
6. The COVID-19 virus is a deception intended to deceive individuals.
7. The medical mafia attempts to prevent the public from using traditional or religious treatments for COVID-19.
8. I concur with those who refer to COVID-19 as "the deception of the century."

In the second group of variables, we shifted our attention to the public's trust in the government. We conducted a thematic analysis of messages related to COVID-19 in the context of government actions, employing a methodology similar to that used for the first group of variables. This analysis led to the development of three propositions, each addressing critical aspects of people's trust in the government: Trust in the government's honesty, Trust in the skills of public officials, and Trust in their willingness to choose between people's interests and their own. It's worth noting that the last two propositions were designed with a negative orientation, serving as reverse indicators that reflect the converse sentiment regarding trust in government officials' skills and good intentions.

1. I believe the government is honest with the public on significant national issues.
2. Most public officials lack the necessary skills and knowledge to fulfill their responsibilities.
3. Public officials prioritize their own interests over those of the general public.

In the third group of variables, we focused on people's perceptions of the free flow of information within their country. We examined messages pertaining to COVID-19 within the context of information accessibility and flow in society, employing a thematic analysis methodology similar to that used in the previous variable groups. This analysis resulted in the formulation of three propositions, each addressing a different aspect of this belief: Belief in the free flow of information in society, Belief in the role of law in information flow; and Belief in the role of the government in information access.

1. In our country, there is free access to information.
2. The law has excessively restricted the freedom of information in our country.
3. In our country, the law supports the right to free information, but the government prevents its exercise.

The fourth group of variables focuses on the media consumption habits of individuals. Numerous questions could be formulated to investigate this topic further. We can focus on people's time to view, read, and listen to various media. In addition, we can design media-specific questions with greater precision. However, our study focused on three specific questions regarding respondents' media consumption.

1. How many hours do you spend per day on social media?
2. How many social media posts do you share daily?
3. How many non-textbooks have you read in the past year (at least fifty percent of a book must have been read for it to be considered read)?

The formulation of our research hypotheses was predicated on the supposition that individuals who devote a substantial amount of time to social media platforms may exhibit a greater propensity for endorsing conspiracy theories. Moreover, this demographic may be predisposed to adopt a less thorough approach to matters of significance. In contrast, individuals with a preference for reading books are more likely to engage in cognitive processing that is more complex and to place greater trust in authoritative sources of information, such as official scientific institutions. It is essential to recognize that these hypotheses are speculative in nature; however, in the context of our heuristic investigation, we deemed them useful in guiding our research efforts.

The categorization of these four sets of variables was crucial to the creation of a questionnaire in Persian. The questionnaire was then meticulously translated into both Russian and German. To ensure the accuracy and consistency of these translations, we enlisted the assistance of Russian- and German-speaking copyeditors, who conducted two rounds of thorough reviews. After incorporating the necessary modifications, the definitive versions of the translated questionnaires were created.

Our overarching goal in administering the questionnaire in three international contexts was to reveal trends and patterns extending beyond Iran's borders, thereby contributing to a deeper comprehension of global phenomena.

Each questionnaire question was carefully constructed as a declarative statement, requiring respondents to select a Likert scale response. This scale was designed to provide five distinct response options, allowing respondents to express their opinions on a spectrum ranging from strongly favorable to strongly unfavorable. These categories of response included "Strongly Agree," "Agree," "Undecided," "Disagree," and "Strongly Disagree."

For the purpose of data collection, we leveraged the capabilities of Google Forms, an online survey creation tool. Subsequently, we disseminated the questionnaire through web-based links to prospective participants residing in Iran, Russia, and Germany, thus facilitating a broad and geographically diverse sample.

Research Method

The development of science has profoundly altered human existence, propelling the acquisition of knowledge at an astounding rate. However, within this rapid progression, there have emerged currents of pessimism directed towards official medical institutions. These attitudes have posed significant obstacles to applying scientific discoveries in the real world. During deadly pandemics, their negative influence becomes especially pronounced.

As the COVID-19 virus rapidly spread, we witnessed instances where specific individuals actively promoted skepticism of medical advice and encouraged others to disregard doctors' recommendations. In addition, they discouraged using essential protective measures, such as wearing masks, and, alarmingly, advised infected individuals to avoid hospital care. These actions put the lives of millions of people in grave danger, highlighting the destructive nature of these viewpoints.

A significant portion of the population's lack of critical thinking skills poses a potentially catastrophic problem. Recent research by Sabbar et al. (2021) uncovered alarming tendencies, even among university students, who are typically considered the intellectual elite of society. The study found that university students frequently lack robust critical thinking skills when interacting with social media content. They show that "the level of education can be the best factor to predict one's trust or doubt regarding the messages." However, they also found that "people, even educated ones, lack high levels of critical thinking, and they easily believe messages they receive on social media."

To combat unscientific and questionable narratives and institutions, we recognize the importance of not only advancing knowledge, a responsibility entrusted to scientists, and promoting science within society, a task that the media and educational institutions should champion but also establishing initiatives aimed at bolstering public confidence in emerging scientific fields and official scientific organizations.

This study aims to gain insight into prevalent cognitive patterns in society and propose solutions for fostering trust. In order to achieve this, we conducted three comprehensive surveys in three distinct nations: Iran, Russia, and Germany. Through these surveys, we hope to elucidate key facets of thought within these societies and provide strategies for fostering trust in science and reputable scientific institutions.

This study falls under the category of heuristic research. In quantitative and non-heuristic studies, it is typical for researchers to examine relationships between variables that are already defined within established theories. In contrast, heuristic studies tend to investigate many relationships among numerous variables, including those for which there may not be well-developed theoretical explanations. Statistical tests are then used to evaluate the significance and strength of these relationships to identify patterns that can enhance our understanding of the investigated subject.

This study seeks to identify the variables that explain individuals' tendencies to believe false information about COVID-19. In this context, our dependent variable is belief in COVID-19 conspiracy theories, while the independent variables that we seek to uncover heuristically fall into three distinct categories: variables pertaining to individuals' trust in government, variables pertaining to the perception of freedom of information within the country, and variables pertaining to media consumption habits. We hypothesize that each of these variables may have a relationship with the trust individuals have in official scientific institutions.

According to Wong, Fang, and Tjosvold (2012), trust in government is an essential foundation for effective communication. Individuals rely heavily on government agencies to provide them with accurate and timely information during crises such as the COVID-19 pandemic. When individuals have a high level of confidence in the government, they are more likely to heed official guidance and follow instructions. This trust plays a crucial role in ensuring public compliance with rules and regulations. During times of crisis, governments frequently implement important measures such as lockdowns, curfews, and vaccination campaigns. High levels of trust in the government can significantly enhance adherence to these measures, which are crucial for protecting public health and safety.

Moreover, trust promotes a sense of civic solidarity and cooperation. When individuals have faith that the government is acting in their best interests, they are more likely to comply with rules and contribute to collective efforts to resolve the crisis. Volunteering, donating, and assisting the disadvantaged are examples of such collective actions. Furthermore, trust is essential for reducing fear and anxiety during times of crisis. According to Mizrahi, Vigod-Gadot, and Cohen (2021), individuals who believe the government effectively manages the situation and takes appropriate action tend to experience less stress and uncertainty.

Moreover, trust in government is necessary for the effective allocation of resources. Medical supplies, emergency response teams, and financial aid must be distributed judiciously during crises such as COVID-19. Trust ensures that these resources are distributed fairly, based on need, and transparently.

In addition, reliance on official sources is a formidable defense against misinformation and conspiracy theories. People are less likely to seek information from unreliable sources when they have faith in government statements and guidance. Governmental institutions have the capacity to cultivate trust within society through various means, one of which involves the provision of scientific support and endorsement from the academic

sector for government policies and rationales. A study underscores that diverse funding sources, including allocations from governmental authorities, "wield substantial influence in shaping research priorities and framing the knowledge produced" (Sarfi et al., 2021, P.199). Consequently, governments have the opportunity to finance scholarly endeavors that align with their objectives, thereby bolstering their arguments and fostering public trust.

In times of crisis, maintaining social order is of the utmost importance. Trust in the government contributes significantly to stability by reducing the likelihood of civil unrest or disobedience, as Smith (2013) noted. Trust in government is, in essence, an indispensable asset during crises, serving as both a catalyst for effective response and a barrier against social disruption.

A country's citizens are better equipped to navigate the complex information landscape and avoid falling victim to misinformation if they believe in the existence of information freedom. When citizens have faith in the existence of freedom of information, they are more likely to believe they have access to a vast array of information sources. According to Pomeranz and Schwid (2021), these sources include independent news outlets, government reports, academic research, and international news. This rich tapestry of information sources enables individuals to cross-reference data and investigate multiple perspectives, thereby reducing the likelihood of being misled by a single, biased source purporting to convey the ultimate truth.

In addition, the belief in the existence of freedom of information promotes a culture of critical thinking among citizens. When individuals know their access to diverse information sources, they are more likely to question and evaluate the information they encounter. This critical thinking enables individuals to distinguish between credible and unreliable information sources.

The belief that information is freely disseminated in society frequently leads to a greater emphasis on media literacy education. Citizens are motivated to acquire the skills necessary to evaluate the credibility of sources, fact-check information, and identify possible biases. Individuals with media literacy can navigate the information landscape effectively.

In a society that upholds the principles of information freedom, information providers are more likely to be held accountable. Media organizations, government agencies, and other information sources are aware that their actions are subject to scrutiny, fostering a higher standard of accuracy and transparency.

Furthermore, Trifonova, Price, and Antonova (2022) note that independent journalism thrives in nations where the free flow of information is upheld. People believe that independent news organizations thrive in environments where journalists are free to investigate and report on various issues without fear of censorship or retaliation. Unbiased journalism is an essential safeguard against misinformation.

Freedom of information also encourages robust public discourse and open debate. When citizens are confident that their voices are heard, and their opinions are taken into account, they are more likely to participate in discussions and offer diverse points of view. This exchange of ideas facilitates collective fact-checking and constructive dialogue, which contributes to correcting misinformation in society. In the end, belief in the existence of information freedom is a crucial component of building informed and resilient communities.

During the COVID-19 pandemic, media consumption patterns were decisive in shaping individuals' propensities to accept or reject false information. People tend to accord greater credibility to information originating from trustworthy sources, a phenomenon also seen with vulnerable groups like refugees in their interaction with technology (Brown et al., 2019). According to Pennycook and Rand (2021), individuals who

primarily consume content from reputable and trusted media outlets are less susceptible to false information. In contrast, those who rely on sources with a history of disseminating false information may be more likely to consider and accept false claims.

Furthermore, media consumption can reinforce existing beliefs. People tend to seek out and give greater weight to information that confirms their preconceived notions. For instance, a person subscribing to a COVID-19-related conspiracy theory may selectively consume media that reinforces their preexisting beliefs, thereby perpetuating falsehoods.

As Nosrati et al. (2020) demonstrated, social media has facilitated valuable connections between doctors and patients. However, it has also inadvertently promoted the formation of echo chambers. Within these echo chambers, individuals are only exposed to information and viewpoints that are identical to their own. Consequently, if an individual is part of a social media group that propagates false COVID-19 information, they may find themselves continually exposed to and influenced by such content.

In addition, media outlets sometimes use sensationalized headlines or clickbait strategies to attract readers, as Chen, Conroy, and Rubin (2015) explain. Individuals who primarily consume news through headlines or brief snippets on social media platforms may form misconceptions or false beliefs based on incomplete or exaggerated information.

Furthermore, the COVID-19 pandemic engendered a deluge of information, some of which was contradictory or evolving as scientists gained more insights about the virus. Information overload can overwhelm individuals, making distinguishing between accurate and false claims difficult. In such situations, individuals may unwittingly adopt and spread false information.

People who lack media literacy skills frequently struggle to evaluate the credibility of sources and the accuracy of the information they encounter. This deficiency in critical evaluation can make them more susceptible to media-disseminated false claims.

Notably, false information is frequently crafted to provoke emotional responses, as highlighted by Tynes et al. (2021). When a story or claim emotionally moves people, they may be more likely to accept it, even in the absence of supporting evidence. Therefore, media consumption heavily emphasizing emotionally charged stories may unintentionally foster false beliefs.

In addition, the opinions and beliefs of one's social network substantially impact the formation of individual perspectives. If members of one's social circle spread false information about COVID-19, this can trigger a cascade effect in which others are more likely to adopt and spread the same falsehood.

Moreover, individuals' decisions to accept or reject information are significantly influenced by their trust in the government, healthcare organizations, and scientific experts. People may be more susceptible to false information if their media consumption erodes their trust in these institutions, as they may seek alternative sources of information that align with their mistrust. Social media serves a dual function in this context. On one hand, it can propagate false information and misinformation, but on the other hand, owing to its significant influence on public perceptions and opinions, it presents governments with the potential to cultivate trust among the populace. One effective means by which governments can achieve this is through leveraging the power of celebrities. A noteworthy study has already elucidated how celebrities, particularly micro-celebrities, can wield considerable sway over people's intentions and decisions (Sarfi, Nosrati & Sabzali, 2021). In essence, governments can harness the influence of social media and celebrities to bolster public trust in the policies they implement.

In a society where citizens believe that public officials are inherently trustworthy and honest, individuals will probably have a higher level of trust in formal and public medical institutions and government policies. This raised trust extends to measures such as

mandatory mask use (also known as "mask mandates") and vaccination campaigns. In this context, public trust serves as the foundation for acceptance and compliance with official directives intended to protect public health.

In a society where individuals have a strong conviction that they have access to a free flow of information, the likelihood of them perceiving they are being deceived is diminished. People in such a society are consequently less likely to seek information from unofficial or unreliable sources. The belief in information freedom not only fosters trust in official institutions but also discourages the use of alternative, potentially unreliable sources.

In addition, a person's media consumption habits and the amount of time they spend on social media platforms, which frequently host numerous conspiracy theories and false information, can influence their level of trust in official scientific institutions.

Research Findings

In the context of a sizable population, a sample size of 382 respondents is considered statistically sufficient to produce results that can be extrapolated to the broader population. In our study, we extended our sampling efforts until 200 Iranian, 100 Russian, and 102 German participants responded. We collected data from a total of 402 respondents, a sizeable sample that allows us to achieve statistical significance at the 0.05 level. This ensures the reliability and generalizability of the findings of our study.

Given that all of the questions utilized the Likert scale, it follows that the variables under investigation in our study were ordinal by definition. To assess the strength of associations between these variables, we employed gamma tests, a statistical tool well-suited for this purpose.

Customarily, when interpreting gamma coefficients, the following thresholds are considered:

- When the gamma value falls below 0.1, it implies either a lack of relationship between the studied variables or a very weak one.
- A gamma coefficient between 0.1 and 0.29 indicates a moderate or mediocre relationship between the variables.
- A gamma coefficient ranging from 0.3 to 1 signifies a robust and substantial relationship between the variables.

It is essential to recognize that, despite their widespread use, these thresholds are not universally fixed. They may be subject to modification based on particular contextual factors and the nature of the examined variables. When defining their criteria for interpreting results, researchers should exercise discretion, as this can be influenced by local conditions and the unique characteristics of the variables in their study.

Given the international scope of our study and the inherent difficulties associated with generalizability, we consciously decided to consider only those relationships with gamma coefficients equal to or greater than 0.25.

Table 1: Results of the gamma tests

Significant Relationships among three groups of variables and false beliefs about COVID-19									
Eight wrong beliefs about COVID-19 →		1	2	3	4	5	6	7	8
Trust in government	The government is honest with people.	-	-	Negative Strong	Negative Strong	-	Negative Strong	-	-
	Public officials have no skill.	-	-	Positive Strong	Positive Strong	-	Positive Strong	Positive Strong	-

	Public officials prioritize their own interests.	-	-	Positive Strong	Positive Strong	-	Positive Strong	-	-
Media consumption	Hours one spends on social media daily.	-	-	-	-	-	-	-	-
	Number of posts shared daily.	-	-	-	-	-	-	-	-
	Number of books read (other than textbooks)	-	-	-	-	-	-	-	-
Freedom of information	There is free access to information.	-	-	Negative Strong	Negative Strong	-	Negative Strong	-	-
	Law delimits freedom of information.	-	-	Positive Strong	Positive Strong	-	Positive Strong	-	-
	The government delimits freedom of information.	-	-	Positive Strong	Positive Strong	-	Positive Strong	Positive Strong	-

As the table above illustrates, a discernible pattern emerges regarding significant and robust relationships. The relationships that emerged, with the exception of two isolated cases, involve erroneous beliefs categorized as #three, #four, and #six, on the one hand and all three statements pertaining to trust in government on the other. In addition, false belief #7 displayed two robust and statistically significant relationships.

Our analysis did not reveal any substantial or statistically significant relationships between COVID-19 misconceptions and media consumption patterns.

Our findings reveal robust and statistically significant associations between three specific beliefs and levels of trust in government and freedom of information. The core of these beliefs is the supposition that the government played a deliberate role in both the creation and spread of the COVID-19 virus.

1. The COVID-19 virus was manufactured and disseminated on purpose in order to achieve specific goals.
2. The COVID-19 virus was purposefully created by unseen hands in order to achieve secret objectives.
3. The COVID-19 virus is a fabrication intended to deceive individuals.

Subsequently, the belief in the existence of a medical mafia and their clandestine activities was deemed significant. It is worth emphasizing that the direction of these relationships adhered to our initial expectations. Specifically, the first proposition regarding trust in government and the first statement regarding freedom of information conveyed a positive tone; therefore, we anticipated an inverse relationship between false beliefs and these propositions. The negative sign of the resulting gamma coefficient substantiates this expectation. In contrast, the gamma coefficient is positive for the remaining relationships, indicating that a decrease in a respondent's trust in the government and belief in the existence of freedom of information is associated with an increased likelihood of holding conspiracy theories about COVID-19.

Conclusion and Discussion

In the context of a public health crisis such as the COVID-19 pandemic, this study highlights the central role of trust in government and belief in the free flow of information in shaping public perceptions and beliefs. When these essential elements are eroded or absent, they paradoxically contribute significantly to the propagation of conspiracy theories about the virus.

Notably, a lack of trust in the government impedes effective public health communication and compliance with vital measures such as mask use and vaccination. When citizens harbor skepticism toward their government, they may be more likely to question official information and directives, frequently seeking refuge in alternative sources that are frequently unreliable or unverified. This climate of mistrust can foster an environment where misinformation and conspiracy theories thrive, resulting in the adoption of risky behaviors or the rejection of well-established preventive measures.

In addition, while the belief in the existence of a free flow of information is essential to the functioning of a democratic society, it is susceptible to exploitation during crises such as the COVID-19 pandemic. Online platforms and social media, which facilitate the unrestricted dissemination of information, can unwittingly serve as fertile ground for the propagation of false information.

By spreading misleading or false information, individuals may unwittingly contribute to the rapid spread of conspiracy theories about COVID-19 in an environment where trust in official sources is lacking. This phenomenon results in the formation of echo chambers and polarization, making it more difficult to combat misinformation. Within these isolated communities, individuals become insulated from alternative perspectives and authoritative sources of information.

Consequently, spreading conspiracy theories about COVID-19 has severe consequences for public health. It can lead to vaccine reluctance, testing avoidance, and high-risk behavior, all of which contribute to the sustained transmission of the virus and hinder efforts to control the pandemic. Effectively addressing this challenge requires the dissemination of accurate information, the restoration of trust in institutions, and the promotion of media literacy. Providing individuals with the ability to distinguish between credible sources and misinformation is crucial in mitigating the negative effects of false beliefs during public health crises.

As a result of the exploratory nature of our study, we cannot assert absolute certainty regarding our findings. Nonetheless, our findings demonstrate that governments can play a significant role in addressing medical misconceptions. There are compelling arguments for emphasizing the significance of fostering government trust as a crucial strategy for combating these superstitions.

Governments are viewed as authoritative institutions with access to credible information and a vast network of medical experts. When governments proactively engage in initiatives aimed at public education and disseminating accurate, science-based information on medical matters, individuals are more likely to trust and embrace this information. Government support carries significant weight and can act as a potent counterbalance to unfounded beliefs, instilling public confidence and dispelling irrational notions.

In essence, fostering trust in the government can serve as a cornerstone in the fight against medical superstitions. Governments can significantly promote evidence-based knowledge and protect public health by capitalizing on their authoritative stature and expertise.

Moreover, the public's willingness to adhere to health directives and recommendations is intricately intertwined with their trust in the government, a crucial factor during medical crises such as pandemics. Obtaining public cooperation is essential to successfully implement preventive measures such as vaccination campaigns, social distancing, and mask use. When individuals have faith in their government's advice, they are more likely to adhere to these essential recommendations, thereby making a substantial contribution to disease control and the protection of public health.

Moreover, trust in government is a central mechanism for preventing the spread of misinformation. Superstitions and erroneous medical beliefs tend to proliferate in

information-deficient environments. By actively disseminating accurate medical information through reputable government channels, authorities can effectively combat the spread of myths and misunderstandings that can lead to harmful behaviors. Government-sourced information serves as a robust defense against conspiracy theories, fostering a well-informed and rational populace committed to making health-related decisions based on evidence and scientific knowledge.

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