



## Perceptions of government guidance and citizen responses during the COVID-19 pandemic: A cross-country analysis

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### ABSTRACT

The public perception of government approaches to pandemic management has played an important role in citizen responses to the COVID-19 pandemic. Although the state and associated health institutions should feasibly be sources of epistemic authority, the pandemic has undermined their legitimacy as anti-science rhetoric proliferated and ‘fake news’ spread rapidly. In this paper, we present a comparative analysis of interviews with citizens across four different countries and explore how a lack of consistency and clarity in public health guidance from government and other trusted institutions led to a polarisation in public perceptions and mixed understandings of the pandemic. Using interview data collected across Brazil, Japan, Spain and the United Kingdom, we explored whether there were differences in the extent to which both state governments and scientific institutions were perceived as epistemic authorities through managing the pandemic. Participants grappled with a distrust of government guidelines, finding alternative sources of information to manage perceived infection risk, and make decisions around self-medication. Our analysis suggests several components were key to maintaining trust – and therefore epistemic authority – during the pandemic: reliability of the information delivered by different government bodies, including clarity of messaging; reliability of the government bodies themselves, including whether officials conducted themselves appropriately; and honesty about claims to expertise, including communicating when the scientific evidence was unclear or inconclusive. Our data suggests that honest communication about the limits of their knowledge would assist governments in engendering trust among citizens, and theoretically, compliance with public health guidelines.

### 1. Introduction

Government responses to the COVID-19 pandemic have varied across nations, contributing to the uneven distribution of over six million deaths worldwide (as of 2023) (World Health Organization, 2023). The public’s perception of the legitimacy of public health guidance and expertise dispersed by both state governments and scientific institutions

has been central to responses to the COVID-19 pandemic. Goldman (2001, p. 92) defines an expert as someone who possesses both extensive knowledge of a topic and the skills to apply that knowledge to new questions. Experts hold an “improved epistemic stance” – epistemic authority – over non-experts (Lavazza & Farina, 2020). Those with epistemic authority therefore “can make informed decisions and accurate predictions that can increase the welfare of their communities”

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(Lavazza & Farina, 2020). Dispersion of scientific expertise has traditionally lain in the hands of scientific experts; however, the State and its associated health institutions should feasibly be sources of *epistemic authority*, given its responsibility for the health and wellbeing of its citizens.

An expert's 'improved epistemic stance' theoretically gives them greater authority to make rational, evidence-based decisions. Quast (2018) argues that 'experts' must not only have knowledge, skills, and capacity to apply the knowledge but also a social responsibility towards citizens. Trust is therefore central to maintaining epistemic authority. Trust plays a key role in decision-making (Yamagishi & Kiyonari, 2000), particularly when people face a dilemma involving a 'common good' such as pandemic containment (Dawes & Messick, 2000; Kollock, 1998). Yuan and colleagues have demonstrated that institutional trust predicted lower COVID-19 fatality rate and a greater willingness to get tested (Yuan et al., 2022). Goldfinch and colleagues found that trust in government and public health scientists strongly predicted use of non-pharmaceutical interventions such as COVID-19 mobile application use in Australia and New Zealand (Goldfinch et al., 2021) and the USA, Hong Kong and Japan (Goldfinch & Taplin, 2022). Essentially, trust in government epistemic authority is critical to widespread compliance with State pandemic containment policies, such as maintaining social distancing or vaccination.

As the pandemic unfolded, government actors could derive some of this legitimate epistemic authority from having access to emerging expertise; by aligning themselves with experts, some of that authority was transferred to government. Scientists and scientific institutions were rapidly thrust into the global limelight, whereby institutions such as the World Health Organization and government scientific advisors became household names. Globally there was an increase in trust in science and scientists; the Wellcome Global Monitor survey of >119,000 people in 113 countries and territories demonstrated increases from 2018 to 2020 in the proportion of people stating they trust both science in general and scientists in their country, with regional variations (Wellcome Trust, 2020). Alignment of government with scientific experts has also allowed governments in some instances to justify unpopular decisions by devolving some of their responsibility (Pietrini et al., 2022).

Additionally, in some national contexts, government and scientific institutions appear to be linked either formally or by informal mechanisms. Although the medical sciences in most countries are in part financed by government, this does not necessarily automatically transfer the legitimacy of knowledge to the government agencies that are providing that funding for some segments of the public. However, the Wellcome Global Monitor showed that people with confidence in their national government were more likely to trust scientists in their country 'a lot' compared with people who did not have confidence in their government (44% vs 33%); similarly, countries with greater confidence in government overall were also more likely to believe that the government's decisions were based "primarily on objective scientific evidence" (Wellcome Trust, 2020, p. 34). This challenges the idea that science and scientific institutions operate outside the political context (Wellcome Trust, 2020).

A particular challenge in the yoking of government epistemic authority to science, however, is that the epistemic authority of medical science itself has been tested throughout the pandemic. A clear challenge was (and remains) the rapidly developing scientific evidence. The COVID-19 pandemic has been described as a 'wicked problem', characterised by expertise that is negotiated and contested, and requiring a 'multifocality' of expertise to address its multiple and varying impacts (Åkerman et al., 2020). Because scientific understanding of COVID-19 was evolving in clear (and sometimes distressing) ways in public view, it very quickly identified both the strengths and limitations of medical science, and authorities faced difficulties being credibly authoritative due to the rapidly changing evidence. The lack of agreement among scientists especially during the early phases of the pandemic further complicated matters. Lynch (2014) argues that expertise is gained in

relation to context-specific knowledge and skills. However, this becomes a problem when experts disagree. This meant that the epistemic authority conferred in part to the government from association with science was not sufficient to make uncontroversial decisions. In addition, their legitimacy as epistemic authorities may be rescinded in the eyes of citizens if they are perceived to not be acting upon that advice themselves. At times this created a rift between government officials and individual scientists, where reality-denial by politicians and a lack of leadership meant that the public trusted experts more than their elected representatives (Lavazza & Farina, 2020). Coupled with the proliferation of numerous sources of information, this provided ample opportunity for both pro- and anti-science groups to mobilise around the pandemic experience, framing the evolution of knowledge in distinctive ways (Morelock & Narita, 2022). In many countries, populism and misinformation have confounded government responses to the pandemic, as well as experts being co-opted by vested interests (Organisation for Economic Co-operation and Development, 2020).

This paper explores differences in how people perceived the epistemic authority of different government responses to the pandemic. Globally, a range of public health containment approaches were taken with aims to both protect healthcare systems and minimise the impact on the economy. Some countries, such as the United States, took a suppression approach in an attempt to contain the health impacts of COVID-19 while minimising economic impacts; others, such as Taiwan, chose an elimination approach that did result in low COVID rates initially, though at the expense of closing borders (Greer et al., 2021). Some switched between the two, in a manner described as the 'Hammer and the Dance', alternating between reasonably strict approaches to decrease Covid rates, and more gentle approaches to 'keep the virus generally under control. Other countries, such as the UK, pursued a "herd immunity" approach in an attempt to gain widespread immunity to COVID-19 (Greer et al., 2021). Brazil, in turn, was criticised for its tardy response, and especially for having a president who delayed and hindered scientifically governed public health responses to COVID-19 (Massard da Fonseca et al., 2021).

### 1.1. Study aims

To date, there has been limited in-depth, qualitative exploration of public responses to these different approaches. In this paper, we draw on data from four countries to examine people's perceptions of governments and pandemic guidance and to explore how governments' epistemic authority varied across the four national contexts during the early stages of the pandemic. In doing so we examine the role of trust as it relates to both government (in the broadest sense described below) and scientific experts. While the large survey studies referenced earlier provide indications of how people perceive science and its relationship with government, our contribution to this existing public opinion survey data is that we can situate people's attitudes in their lived experiences. Through this, we explore how *trust* that governments are acting in citizens' best interests is the key element in affecting whether their citizens perceived governments to be legitimate epistemic authorities.

A range of governing bodies were responsible for setting and implementing COVID-19 public health guidance, including both central governments and local or regional governments. Our conception of 'government response' focuses on public health guidance in the traditional sense (such as those protections and restrictions included in the COVID-19 Government Response Tracker (Hale et al., 2021).

## 2. Methods

### 2.1. Approach

We undertook a cross-country comparative qualitative study using data from research on patient experiences of COVID-19 in Brazil, Japan, Spain and the UK (completed study) (Table 1). The original studies

**Table 1**  
Participant characteristics grouped by country.

Participants		n
<b>Japan (n = 14)</b>		
Gender	Female	7
Ethnicity <sup>a</sup>	Japanese	14
Age	20–29	1
	30–39	2
	40–49	2
	50–59	6
	60–69	2
	70–79	1
<b>Spain (n = 20)</b>		
Gender	Female	14
Ethnicity	Asian	1
	European (Maghreb origin)	2
	Latin American (White European origin)	1
	White Spanish	16
Age (years)	<20	1
	20–29	5
	30–39	2
	40–49	5
	50–59	3
	60–69	4
<b>United Kingdom (n = 47)</b>		
Gender	Female	31
Ethnicity	Black	
	Black African	5
	Black Caribbean	5
	East Asian	3
	Chinese	1
	Malaysian	2
	Middle Eastern	1
	Orthodox Jewish	4
	South Asian	14
	Bangladeshi	2
	Indian	4
	Pakistani	8
	White	16
	British	13
Other	3	
Age	20–29	4
	30–39	14
	40–49	12
	50–59	11
	60–69	6
	70–79	1
<b>Brazil (n = 46)</b>		
Gender	Female	34
Ethnicity	Asian	1
	Black	5
	Brown	11
	White	29
Age	20–29	6
	30–39	20
	40–49	7
	50–59	8
	60–69	5

<sup>a</sup> Ethnicity data is not routinely collected in Japan.

conducted narrative interviews between March 2020 and September 2021 with a wide range of participants (Ziebland et al., 2021) about their general experiences of COVID-19. This included their experience of the infection itself and also wider aspects such as views about the pandemic and how the public health guidance affected their personal and professional lives. Appendix 1 details health system and country contexts across the four countries. The multidisciplinary cross-national research team for this research included qualitative researchers trained in sociology, psychology, anthropology, public health, medicine, politics, and political communication studies.

Although recruitment varied across countries, in each country we used maximum variation sampling (Coyne, 1997) to capture a range of diverse perspectives and experiences and variation in gender, ethnicity, socioeconomic status, age, and geographical location. Participants self-identified as having experience of COVID-19 infection and were over 18 years of age. Recruitment was through a variety of routes via clinicians, social media and digital networks, support groups and snowballing to encourage a wide variety of experiences and perspectives. Study teams frequently met to consider sampling and recruitment process and to determine which demographic characteristics needed further representation within the sample. All research teams undertook a narrative approach to interviewing that began with an open-ended question inviting a participant to share their story and experiences of the pandemic, followed by semi-structured probing questions, as part of the DIPEX methodology (Ziebland et al., 2021). Interviews lasted between 30 and 190 min and took place online, face-to-face, or via telephone, and over several sessions if the participant preferred. Interviews were video or audio-recorded. The interview recordings were transcribed verbatim, independently. Informed consent was obtained before each interview. Each study was approved by our respective ethical review boards.

## 2.2. Data analysis

For this present analysis, we identified interviews from the researchers' respective country studies that contained evaluations of government responses to the COVID-19 pandemic. Overall, 127 participants with experience of living with and after COVID-19 in Brazil (n = 46), Japan (n = 14), Spain (n = 20) and the United Kingdom (n = 47) from the in-depth narrative interviews are included in this paper. Table 1 shows participant characteristics.

We conducted an inductive comparative thematic analysis of participant experiences across the four countries. The initial inductive analysis was conducted by each country team in their own native language, with selection of relevant excerpts of data (Knutsen et al., 2017; Sixsmith et al., 2014; Woolhead et al., 2006). Each country team then compiled their findings detailing the identified themes in English. We met to discuss "overarching cross-national themes" over two online workshops. Each country presented their data and we identified cross-cutting themes that underpinned data from all countries (Sixsmith et al., 2014). This was then refined and the resulting findings are presented as four country case summaries. This approach allowed us to partially overcome some of the limitations of varying participant numbers across countries, by allowing presentation of each country's data in its own right before addressing cross-cutting themes.

## 3. Results

We present four country case summaries of participants grappling with threatened trust, in which (mis)trust in epistemic authorities manifested across different issues and contexts: the divide between central and regional government authority, challenges with consistent policy implementation and the controversial use of pharmaceutical interventions. Pseudonyms are used to identify participants.

### 3.1. Japan – following government guidance despite distrust of the current administration

In the Japanese dataset, participants tended to be more critical of State policies or Central Government, compared with the ‘prefectures’ (regional/local governments), which provide the majority of public services. This reflects previous data that demonstrates low trust in central government at 38% in 2018 compared with the OECD average (45%) (Organisation for Economic Co-operation and Development, 2019). Participants often made comparisons with foreign government policies in critiquing the Central Government, using words such as “slow,” “half-hearted,” “indecisive,” and “backroom politics.” For instance, Kei, a woman in her sixties, cited the example of Israel for its speedy vaccination program: “*The Japanese Government is tens of times slower than other countries and they are so stupid that they don’t even recognize that they are slow.*” Koichi and Shino both praised the neighbouring Taiwanese government for its effective and decisive policies led by the digital minister Audrey Tang.

*I saw on the TV that since the breakout of the COVID, [Audrey Tang] had held a press conference every day and answered all the questions. ... Sometimes she would confess nearly in tears that she didn’t know the answer. ... While the [Taiwanese] government and research institutions are united to fight against COVID, there is no such sign in the Japanese Government. You just hear about members of the Diet [the national legislature of Japan] going out to drink at this time. I am appalled at this low level of awareness. ... The Japanese government since the Abe administration is full of secrets ... It’s all backroom politics. – Koichi, male, 50–59 years, Japanese*

Holding the Olympic Games in Tokyo while other countries were in various states of lockdown also raised suspicions that the lenient Government policies were influenced by economic interests rather than scientific evidence, and these were contrasted with the more honest and hardworking efforts of local administrators. Sora, who moved to Tokyo metropolitan area after getting infected in a local city, expressed her concerns about the crowds attending the Olympic Games and her doubt about the underlying reasons for holding the Games:

*Those people working in local health centers and administrations are fighting on the frontline, doing their best. So, I don’t have much to complain about those people. Rather I would suggest cancelling the Olympic Games. I really didn’t want to move to the Metropolitan area where the Olympic Games were to be held in July and the large crowds were expected to visit. ... So, I just want them [politicians] to understand the popular sentiment, not just about their financial gains and benefits. – Sora, female, 20–29 years, Japanese*

Despite negative evaluations of the current administration, our Japanese study participants reported that people tended to follow the public health guidance issued by the government, such as face-covering, social distancing, and avoidance of unnecessary outings. Shino, whose father had died of COVID, believed that the government should be “more decisive”:

*I know that there are a lot of people who do not agree with it, but I want them to follow the guidance. And the guidance should be more clear, not changing all the time. They need to be based on firm conviction and be more decisive. I don’t mind having a lockdown, if it can end this crisis as soon as possible. – Shino, female 50–59 years, Japanese*

Shino also had a strong faith in science and believed that vaccination would be the key to end the pandemic:

*I wrote in the farewell letter to my father that “I believe that human beings are wise and strong creatures. Although Papa had to fall victim to COVID, I am sure that human beings will conquer corona. There are great people like Professor Yamanaka [Nobel prize winner]. I’m sure that we shall win over the virus. – Shino, female, 50–59 years, Japanese*

Such a sense of trust in ‘experts’ (health professionals and scientists) can also be found in other participants’ accounts. Even the information disseminated by the Ministry of Health, Labour and Welfare (MHLW) was considered reliable despite the Ministry’s location in the Central government, potentially because of its close association with scientific experts. Ikue, a public health nurse in her 30’s, states: “*I trusted and tried to catch the information from the MHLW. I would listen to doctors’ comments on infectious diseases and try to follow the statistics issued by the MHLW, or organisations specializing in infectious diseases.*”

This sense of trust was often attributed to the honesty from the experts, even when they did not have all the answers. Koichi’s appraisal of the digital minister Audrey Tang quoted earlier was also based on the perceived transparency she, as an IT expert, brought to the Taiwanese administration, compared with Japanese politicians. Similarly, Suguru, a journalist in his 40’s working for a major newspaper stated:

*Some of the doctors who specialize in infectious diseases are providing up-to-date information. And, how should I say, there are a few of them [who] frankly told us that there were things even they didn’t know, and I think at least what they share is trustworthy ... I feel I can trust the information, which I searched by the experts’ names. – Suguru, male, 40–49 years, Japanese*

Participants held more sympathy for local governments in prefectures [who employ healthcare professionals] perceiving them as “doing as much as they can”. Kumi, a woman in her forties, noted, “*I knew that the local health centers were really tied up, so I didn’t want to bother people working there anymore, and I didn’t expect them to do more than what they are doing now.*”

However, not all local governments succeeded in devising an effective system. Kei, who was transported to the hospital by an ambulance after calling the local health centre for three days, was indignant of the incompetency of the local government.

*Well, I do listen to what the central government is saying. I mean, I just listen, but what matters to us is the local government’s policy. The State is just presenting the principle, and if the Tokyo Metropolitan Government decides not to follow that principle, then that’s it. It doesn’t matter to us [...] I sent the Metropolitan Government emails several times, regarding the terrible situation ... when I was hospitalized it took [the paramedics] three hours making phone calls to find a hospital. [...] I guess they were in panic. They weren’t handling the matter properly. – Kei, female, 40–49 years, Japanese*

Participants reported following guidance even in the absence of accurate information and effective management systems. In this way, participants viewed central or local governments as holding epistemic authority when governments aligned themselves with the right kind of “experts.”

### 3.2. Spain – seeking alternative epistemic authority

The data analysed in the Spanish dataset was concerned with the constantly changing information given at the time, which tended to decrease confidence in government measures. Participants reported a lack of confidence and trust in the government, which subsequently eroded the legitimacy of the government’s epistemic authority. Amalia, a woman in her fifties, said:

*It’s just that I don’t trust it, now I don’t trust it anymore. Masks are essential now, then convenient, then I don’t know what. You’re a little scared because I don’t trust those people, come on ... Not at all, not at all. – Amalia, Female, 50–59 years, White Spanish*

Some participants expressed frustration in the government’s inability to answer questions satisfactorily. Similar to Japan’s dataset, analysis of participant accounts identified how honesty in handling the pandemic was highly valued. In Spain, however, this sentiment was extended to honesty regardless of political ideology, highlighting how many participants considered the pandemic to be serious enough that it

should transcend usual partisanship lines. Amalia goes on to say:

*I want a government that is honest. That they speak at the national level and say: "Ladies and gentlemen, we are scared because we do not know how to address this issue, so we ask all the greatest experts on these issues, from whatever party and whatever place they come from, to advise us." And then I would have applauded Sánchez [Prime Minister of Spain] even though I'm not a socialist, and I would have said "look, he's honest. He doesn't care about his seat, but he cares that we have a very serious problem.*

The identification of such a significant event as the COVID-19 pandemic as being a non-partisan issue by some participants demonstrates how critical transparency is for maintaining epistemic authority. Similarly, political decisions motivated primarily by upcoming elections rather than national unity (to produce clear and consistent messaging) was perceived as serving political interests rather than the needs of the Spanish population. One participant calls for "less demagoguery. More using resources than sometimes to agree, sit at a table, agree and talk" – Macarena, Female, 60–69 years, White Spanish).

Some participants consequentially preferred to receive information from WHO and other trusted scientific figures or publications; these were viewed as more trustworthy sources of information than the government due to the perceived lack of a political agenda. Macarena continues:

*I like the press more, a scientific press which is more interesting, some posts by science bloggers like "[Blog Name]", for example, she is a girl that I like a lot. "[Blog name]", who is also a girl who spreads the word well, accessible to those who are not ... of course because I don't have enough scientific knowledge for some levels that's why, because being an arts person my knowledge of certain science things is basic, so I like that. – Macarena, Female, 60–69 years, White Spanish*

The participant below also mentions turning to health professionals involved in the COVID-19 response, perhaps due to the credible authority they were conferred from their lived experience:

*You have to believe in science and in the people who are on the front line, like the ones who have been there. – Chano, Male, 40–49 years, Latin American*

### 3.3. United Kingdom – realising and responding to the insouciance of elected leaders

In the UK, while some participants felt that the government had done 'what they could' to assure their safety, there was otherwise a sense of abandonment by the state. This was due to a lack of clarity in government guidelines, which were highly changeable but not clearly correlated to contemporaneous scientific evidence, a perceived lack of honesty by politicians, and a callous disregard for governments' own rules among politicians. Gary, a man in his sixties, described his realisation of abandonment as a 'horrible feeling', and recounted:

*I remember expressing it to a friend, I said, "Do you know, I always felt that if you lived in the country and a sort of country that we live in, government is sort of looking out for you and you're going to be okay." I suddenly didn't feel that they were there, they were any more looking out for us as their main priority and that therefore we might not be okay, you know. And that sort of, that sort of bled off into wider feelings about the government, you know, in terms of the future and suddenly can't trust them. – Gary, male, 60–69 years, White British*

*I had lots of people contact me, lots of friends, saying, "I don't understand what the Prime Minister's saying." [...] And these are not stupid people, these were very ordinary people. They didn't understand. I think it's damning, it's a damning indictment that you've got a pandemic happening in real time and you've got this messaging that nobody could understand. – Safi, female, 40–49 years, Pakistani*

As in the Japan and Spain datasets, participants indicated that government honesty about not knowing something was preferable to misplaced confidence and assurance. Across these settings, the value of governmental guidelines was further diluted when politicians were observed making 'irresponsible' choices across these countries, such as choosing to go ahead with hosting the Olympics in Japan, and violating their own rules regarding social distancing in the UK. People across these countries felt politicians had alternative priorities, not aligned with keeping their populations safe. For example, some UK participants felt that restrictions should have been more precautionary and implemented earlier:

*So I think earlier on, there should have been more [protections], even if it was very basic level, even if it said, "we don't know what it is yet but we know that this is good". – Douglas, male, 40–49 years, White British*

*It wasn't like everybody should wear masks and then, you know, it was lockdown and then the government started sort of ferreting around in the dark trying to think which measures they should put in place and they're still, they still to me seem to be not quite clear on what they should do. – Maggie, female, 50–59 years, White British*

Participants felt that the government 'broke their own rules' or made 'mistakes', which did not engender trust among citizens.

*You think that the Government, oh for goodness sake, couldn't they have figured that out, you know, that was going to happen [...] how can you trust the people in charge when they make stupid mistakes and they, you know, and then media attacks them and, and we get, you know, the low down on, on the people in the Government and yeah [...] we had no faith in anybody really, that, that was, that was worrying, that made me scared. – Rochelle, female, 50–59 years, White European*

Similar to Japanese and Spanish participants, UK participants also maintained a careful distinction between different governing bodies. In the UK, the National Health Service (NHS) is perceived to be distinct and independent from government (although it is funded by central government) and, therefore, to be a more trustworthy source of authority. In the national media, there were some quite visible, tangible attempts to transfer some of this authority to government representatives, such as news broadcasts hosting health experts and NHS senior leadership (as scientific experts and leaders) standing side-by-side with elected government officials. However, the scientific experts tended to be received generously by the public and appeared to be a more legitimate source of epistemic authority.

*When health professionals gave a TV presentation, more so than the politicians, I definitely sat up and paid attention and you know, if they said "sing happy birthday three times in your head when you're washing your hands", fine, I'm happy to do that. As long as it came from a credible source and I think one of the issues was credible sources at the time that weren't either over exaggerating and I think that's just a, a slight problem with British society at the moment. It's the lack of credible authority. – Gerald, male, 50–59 years, White British*

*I do not have a lot of confidence in our Government at the moment, no. I'm very grateful for the NHS. – Priyanka, female, 30–39 years, Indian*

When government guidance was judged to be inadequate or insufficient, or when rules and guidelines changed with little explanation, many participants turned to alternative forms of scientific authority instead. Similar to the Spanish participant Macarena, several of our UK participants reported subverting the official state guidance, making their own decisions about pandemic management and implementing their own protections even when not recommended or mandated by state government.

*There was always a, a conflict of you know, do you follow the guidelines as the government gives them or do you do it earlier, you know, with the discussion of you know, the English government weren't issuing the*

lockdown till quite late into the pandemic with the theory of you know, let everyone get it you know, [herd] immunity, you know, and this you know, of it will be better off in the long run. And although, you know, all the other countries weren't going along with that. England was one of the only countries that had such a theory. – Jacob, male, 30–39 years, Jewish

In all our country sub-studies, the role of news and social media was highly significant in keeping everybody connected and updated, not just across national contexts, but also in terms of how things were developing internationally. Additionally, when national guidance changed over time with no explanation, and people were aware of different policies in other countries and diverging opinions from scientists, people speculated about the true motivation of their own government's actions.

Obviously, we just did the same thing. Masks, when we were leaving our bubble, even in our classroom, washing hands, washing tables, but there was no difference in my medical condition. So I really don't see how them conditions were downgraded other than the fact that the Government couldn't fund it. – Susanne, female, 40–49 years, White British

... the measures were being eased, so people didn't care about much of to, to wear mask, or, you know, cover themselves, or using the sanitizers or things like that. Which I feel as wrong as the scientists are saying even though things are improving we should continue to wear this until it's 100% they are sure that, you know, the Covid-19 is finished, is gone you know. – Sintieh, male, 30–39 years, Black African

### 3.4. Brazil – ideologically-driven pharmaceutical adoption

Uniquely, participant evaluations of government guidance in Brazil focused extensively on the controversial use of pharmaceuticals, such as ivermectin, hydrochloroquine and azithromycin, as COVID-19 treatments. Bolsonaro and his government at the time when data were collected heavily supported these experimental pharmaceutical treatments and invested substantial funding into procuring them (Massard da Fonseca et al., 2021).

Hydroxychloroquine was perceived as a 'wonder drug'. Juliana, a woman in her sixties, characterises the belief in hydroxychloroquine as a 'faith', suggesting the belief in an unproven pharmaceutical treatment was tied to ideology – or at least confidence in the Bolsonaro government – rather than effectiveness:

I never developed this faith in hydroxychloroquine, like many people, as part of the population, and I was obviously apprehensive about the side effects, you know, the effects of hydroxychloroquine. – Juliana, female, 60–69 years, White

Another participant, José (a man in his thirties), admitted he chose to take various treatments despite the lack of evidence available at the time, corroborating the idea that this may have been ideologically-motivated, fuelled by faith in the Brazilian government's investment in hydroxychloroquine:

There is no evidence at all, I know but I confess that I did it. I took chloroquine, I took Annita [nitazoxanide]. Annita made the diarrhoea much worse, so I stopped it in the middle. And I took Azithromycin. Then it passed. [...] I decided because there was no defined treatment recommended by the Ministry of Health or by WHO and because there were informal treatments available. So, I chose to use medications, Ivermectin, azithromycin, effervescent vitamin C, a multivitamin complex with zinc and vitamin D. – José, male, 30–39 years, White

Health professionals were perceived by some to provide an alternative, legitimate viewpoint to the Bolsonaro government. For some Brazilian participants, the role of the media was central to giving a voice to health professionals and other scientific actors who could provide an alternative line to the fundamentalist messaging from State government:

[...] by the broadcasters I watched, the role they played was very important, giving voice to different health professionals, right, and also presenting the contradictory, in addition to a very fundamentalist line, I would say, from the Government. Voice was given to other professionals who differed and who also had their statements. – Carlos, male, 40–49 years, Brown

There were also situations in which the patient did not trust his doctor's recommendation to use chloroquine, which contradicted scientific evidence, but did not have the courage to question the professional.

Chloroquine in Brazil has become a political medicine, right, it has become something that should not happen with [...] I just left, right, I didn't say anything like that, and one thing I regret is not having questioned this doctor, you know, "ok, but so what? Will you prescribe it to me, how? Based on what are you talking about? Because from what I'm seeing, from the things I'm reading, the scientific evidence is saying that they have no effect, that it's even dangerous." – Hugo, male, 20–29 years, White

Here, we see Hugo feeling compelled to challenge his own healthcare provider, which is a step further than the accounts from other countries, where people may choose to ignore wider national guidance, but not their own clinicians' advice. However, the extent to which this was allowed to happen due to internal politics ('politicking') was also questioned by participants. Carlos, a man in his forties, discusses how he did not believe that scientists had been given a fair platform to talk about Covid:

Nowadays it has become politicking, so what is lacking, I believe, we have many scientists, you know, we have many people, I think they are capable of going to the television and enlightening us, right. So the treatment itself is, I think there are some medications that are used, that are, I think they are effective, yes, that help to fight, but further clarifications had to be made, right, mainly for the scientific part, which had to be show us that, that we had to fight to go on television, I think it's not easy, mainly because there's politics in the middle. – Carlos, male, 40–49 years, Brown

Scientists were held in high esteem by these participants and appeared as legitimate sources of epistemic authority, in direct contradiction to counsel from the state government. Maria, a woman in her fifties, discusses how, while she followed the advice of health professionals, her mother implied that she was hospitalised as a result of not following government advice to take pharmaceuticals:

I wasn't completely happy because I had a very serious discussion with my mother because she is a Bolsonaro supporter and she sent me some letters when I was at the hotel. "You have to take medicine". I said okay ... I went through everything [hospitalisation for COVID-19] and she insinuated that I went through hospitalisation because I didn't take the proper medicines she mentioned. I won't accept her beliefs about it because I consulted four doctors and none of them recommended me to take these medicines. – Maria, female, 50–59 years, White

Uniquely in the Brazil data, as illustrated by Hugo's experience above, participants also recognised that some advice they received from health professionals was ideologically charged. Unlike in the other three countries, where scientists and doctors were seen as united in providing the scientifically legitimate narrative, and politicians were the untrustworthy authorities, in Brazil, doctors and medical professionals were also sometimes deemed untrustworthy and strongly aligned with political ideology. Maria went on to describe how she received advice to take azithromycin from a family member who was a doctor, though she reported to believe this was due to ideology rather than evidence-based medicine.

I trusted him a lot. This uncle of mine, who I also said is a doctor, even called me and said: "no, take Azithromycin, it's good", but I didn't trust it

*so much, I didn't think it would be necessary like that, I think there is also a more relational issue with my family, in an ideological issue, they were, at first, defending the Chloroquine issue a lot [...] I lost a little trust them.* – Maria, female, 50–59 years, White

*Now, in relation to information [...] that was not useful [...] there's the misinformation here in Brazil, right, this whole, this fake news thing here, everything that has been politically built in relation to chloroquine, so, I think that it's a big absurdity and I think it's a problem anyway, I think it's horrible for people like that, because a lot of people end up believing, right, and trusting this information, so ...* - Hugo, male, 20–29 years, White

Although the Brazilian responses were focused specifically around pharmaceutical products, the underlying phenomenon is the same as for the other countries, which is that epistemic authority could not be maintained without trust. A few Brazilian participants followed the government guidance despite their reservations because of the *absence* of other forms of epistemic authority, but similar to participants in the other three countries, many did not believe it, and looked for sources of information that went beyond national discourses.

Similarly, although Brazil was not approaching elections at the time of data collection as was the case in Spain, the interference of political ideology in pandemic management was comparable. Participants in all four countries felt distressed by how political point-scoring, and self-aggrandizing gestures by powerful politicians were being prioritized over protecting their citizens, and the sense of abandonment, fear and anger was palpable across all the data.

### 3.5. Cross-cutting issues

Our data suggests that, across multiple country contexts, trust in government to keep its citizens safe (or, as safe as possible given the circumstances) may be required to maintain government epistemic authority during the pandemic. In this way, a lack of trust appears to erode epistemic authority. The way that governments handled uncertainty was a critical moment for trust, requiring honest communication. Whereas the lack of consistency was especially criticised by Spanish participants, our Japan and UK participants tended to appreciate the inexact and evolving nature of evidence, but felt that scientists and governments needed to be honest about the state of (incomplete) knowledge. Throughout the data, this honesty in the face of uncertainty garnered sympathy for governments, promoting trust.

Across our datasets, trust in government was eroded by dishonesty, inconsistent messaging, unclear guidance, unreliable policies, leading to a sense of abandonment. Participants widely criticised the inconsistency and lack of clarity around changing guidelines; in Japan, participants suspected economic reasons, whereas in Spain, this was attributed to political manoeuvring for the upcoming elections. In the subsequent absence of legitimate epistemic authority from the state government, participants grappled with distrust of official government guidelines, finding alternative sources of information, managing perceived infection risk, and decisions around self-medication. The following quotation from Jamal, a man in his fifties living in the United Kingdom, summarises this resulting feeling of abandonment:

*So I just thought worldwide that the government leaders let us down, they definitely jeopardised people, put lives in, in danger and millions of people, millions probably have died from COVID and I'm not saying they could have prevented it from getting here, they could have slowed down the process, which probably would have given us a better chance of dealing with it better but, you know, the borders were still open, people were still travelling freely, you know, so yeah I think the Government got it all wrong.* – Jamal, male, 50–59 years, Black Caribbean

Our data demonstrates that as trust was damaged, epistemic authority failed and government credibility decreased. Authority shifted to organisations that could provide alternative sources of more credible

authority – in our data, mostly scientific institutions, but also anti-science organisations that mobilised around the epistemic authority vacuum. In addition, responsibility shifted to citizens themselves, producing an individualistic outlook in a time that increasingly required a cooperative effort to benefit from the 'collective good' of staying safe, i. e. avoiding infection. This was particularly evident in the Spanish and UK data, where people took their education into their own hands because of the sense of abandonment.

Lastly, the distinction between central government and other scientific actors was common across the data, and was particularly illuminated in Japanese participant accounts of the perceived trustworthiness of local government (by proxy of regionally employed health professionals). Uniquely in Brazil, however, public health scientists were differentiated from health professionals such as doctors, the latter of which were often perceived to have been co-opted by vested interests.

## 4. Discussion

Our data suggests that trust in government may be an essential component to establishing and maintaining epistemic authority. While governments can take on some of the epistemic authority of scientific experts through strategic alignment, several components were key to maintaining trust – and therefore epistemic authority – during the pandemic. These included: reliability of the information delivered by different government bodies, including clarity of information, reliability of the government bodies themselves, including whether officials behaved appropriately, and honesty about claims to expertise, including communicating when something was not known. This had important implications for citizen-state relations; citizens turned elsewhere for credible sources of epistemic authority in its absence in government (such as in the Brazil dataset, where participants sought out alternative information sources) and there were also internal shifts of personal responsibility for keeping themselves and their communities safe, such as in the UK data, where feeling abandoned led to an internal shift of responsibility from government.

The relationship between trust and epistemic authority is complex. A model based on responding to food scares and since applied to the COVID-19 pandemic identifies credibility in terms of independent epistemic authority as essential for building trust (Henderson et al., 2020). The independence and impartiality required of epistemic authorities undoubtedly garners trust. However, just as trust is necessary to maintain the epistemic authority of scientific experts, our data shows that trust is also required to maintain epistemic authority when it is being transferred to the government by virtue of being associated with experts.

Trust in government is not necessarily an individual decision. In addition to the pivotal role of institutional trust, Yuan and colleagues also showed that interpersonal trust (trust between/across citizens) increased compliance with COVID-19 prevention guidance (Yuan et al., 2022), suggesting that trust in government may be moderated in part by interpersonal trust in close relationships. Citizen-government relationships have so far been conceptualised as between one individual and the State; however, this may not be as relevant for other societies with less individualistic values. A linear trust relationship between citizen and government may not capture the complexity produced by more collective network relationships, such as interpersonal familial or social relationships. This warrants further consideration in the context of large cross-national studies of trust, government and science, such as the Wellcome Global Monitor Survey.

Notably, our data gives compelling evidence as to how people want uncertainty to be handled and communicated by their governments. Honest communication in the face of uncertain evidence or knowledge was preferred to unsubstantiated claims of epistemic authority; selective rather than comprehensive claims to expertise were central to maintaining trust. This honest communication is more traditionally associated with the roles of scientific experts rather than politicians. Central to

their claim as experts is the idea that they provide 'rational' and impartial knowledge (Goldman, 2001), independent from political ideology. Our data suggests that honest communication about the limits of their knowledge would assist governments in engendering trust among citizens, and theoretically, compliance with public health guidelines. Comprehensive expertise is not a requirement of trust, but rather explicitly selective expertise may facilitate trust.

Participants in our data made reference to a wide range of governing bodies, including State central governments, local or prefecture governments, individual ministries, individual officials and politicians, and political parties, as well as international agencies, political figures and scientists. Sometimes, there was little distinction made between these, with blurred lines between political bodies and their representatives, roles and responsibilities. This suggests that academic distinctions of 'who governs what and where' might not matter so much in the eyes of citizens, as their relationship is with 'government' as an imprecise corpus. Bertou argues that political distrust should be defined as reflecting 'perceptions of untrustworthiness specific to the political system in its entirety or its components' (Bertou, 2019). In our data, elected officials, politicians, were often conflated in the data with central government as a body. This meant that individual failings on the part of politicians marred the reputation of the governing body as a whole, and decreased trust.

However, the same was not true of the relationship between government and the health system. Given its state financing, the health system could feasibly be considered an extension of government in the eyes of citizens. However, our data suggests this was not the case, with a distinction between the perception of the health system (and healthcare workers as proxies for the system) and the government as entities. This was especially true in the data from the UK, with a stark distinction in how participants evaluated government actors compared with the NHS, and Japan, where there were similar differences in evaluations of state versus local government guidance and actions. Comparison with experiences in a country with more privately-funded healthcare, such as the United States, may introduce further nuance.

A key strength of this study was the ability to situate the attitudes previously collected in large cross-national surveys (Wellcome Trust, 2020) in the lived experience of people across several countries. Our datasets are comprised of experientially-informed respondents with cross national and context variation, which gives us a deeper and more informed citizen base. Our data are potentially limited by self-selection bias, whereby given that the inclusion criteria required having contracted COVID-19, our sample was likely skewed away from people who had never been infected and who potentially may have displayed more positive evaluations of government responses to the pandemic. The cross-country analysis required additional data processing steps and translation to produce data that were able to be shared between multiple research teams speaking four different languages. This may have limited the analytical potential of the datasets as opposed to if they had been analysed and discussed in the language in which they had been collected. We attempted to overcome this by leaving translation until fairly late in the analysis process, whereby the initial analysis was conducted in the language of data collection. However, later phases of results refinement were conducted in English. This remains an ongoing challenge for cross-country analysis (Chapple & Ziebland, 2018).

## 5. Conclusion

In conclusion, our cross-country analysis demonstrated trust in government, and therefore epistemic authority, appeared to be moderated by reliability of information, reliability of government bodies, and honesty about claims to expertise. While governments (in many forms) could claim epistemic authority by aligning themselves with scientific institutions, this was rescinded if trust was damaged. Honest communication about the limits of their knowledge would assist governments in engendering trust among citizens, and therefore compliance with public

health guidelines.

## Ethical review

UK: NHS Health Research Authority [IRAS 112111; minor amendments 22].

Spain: Comité de Ética de la Investigación con medicamentos del Complejo Hospitalario Universitario de Canarias (Santa Cruz de Tenerife) (CHUNSC\_2020\_39).

Japan: DIPEX-Japan's internal ethics committee (20-07, 20-08); Ethics Committee of Kyoto University School of Medicine (R3110).

Brazil: Hospital Universitário Clementino Fraga Filho da Universidade Federal do Rio de Janeiro HUCFF UFRJ [CAAE 12451113.2.0000.5257].

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## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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