The effects of President Trump's COVID-19 diagnosis on hoax beliefs and risk perceptions of the virus in the U.S.

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Abstract

The SARS-CoV-2 pandemic has been the worst infectious disease outbreak in the U.S. in over 100 years and was associated with the deaths of over 500,000 people in the U.S. within its first year alone. This public health challenge is additionally affected by public scepticism over the severity of the disease, or even its existence in many countries, including the U.S. Previous research has shown that this scepticism is politically skewed in the U.S., with conservatives more likely to downplay or deny the risks of the virus. Such polarisation has been led by elite cues, including the President of the U.S. at one point describing the virus as a 'hoax'. However, the subsequent hospitalisation of President Trump with COVID-19 in October 2020 served as a high-profile exemplar of the reality and risks of the virus, and as such may have influenced opinions, particularly for U.S. conservatives. The current research draws on two studies, both of which serendipitously surveyed independent representative U.S. samples before and shortly after the announcement of Trump's illness. In Study 1, measuring risk perceptions of the virus, we find that, controlling for sociodemographic factors, participants surveyed before and after the announcement did not differ in their risk perception regardless of political orientation. However, in Study 2, measuring belief that the virus is a hoax, we find that among those on the far right of the political spectrum, such a belief was lower for those surveyed after the announcement, suggesting that Trump's hospitalisation may have changed the beliefs of those most receptive to the President's earlier claims of the virus being a hoax.

In the words of the Director of the World Health Organization, “We’re not just fighting an epidemic; we’re fighting an infodemic” [1]. In times when information is uncertain or rapidly changing, conflicting information can arise which can affect people’s risk perception and undermine their trust in necessity for, or efficacy of, behavioural recommendations and guidelines. This can then worsen an epidemic by reducing protective behaviours taken by individuals. Scepticism about both the existence and severity of SARS-CoV-2 are associated with lower compliance with COVID-19 protective and preventive behaviours, including physical distancing, use of face masks, or vaccination intention [2,3], and lower risk perception [4]. Indeed, the very features defining a crisis such as the SARS-CoV-2 pandemic have been suggested as increasing susceptibility to misinformation and distorted risk perceptions. These features are: uncertainty and novelty, rapid onset, potentially severe losses, apparent randomness and a lack of control [5,6]. These effects are then coupled with information overload. Kaufhold et al. [7] emphasised that large amounts of information during large-scale crises can lead to information levels exceeding cognitive processing capacity, at which point decision quality diminishes. Under these circumstances, more intuitive natural assessments and heuristics act as rules of thumb [8,9].

One form of cue particularly likely to act as a powerful heuristic influencing risk perception and COVID-19 related beliefs is the use of ‘exemplars’, i.e. individual case reports that illustrate and simplify complex ideas [10]. Research has previously shown the potential effects of such exemplars on health attitudes [11], including increased issue awareness, health related communication, engagement in prevention and treatment, and reduced disease stigmatization [12,e.g. 13–15]. There is also evidence that exposure to exemplars about threats can magnify perceptions of personal susceptibility to, and severity of, the hazard in a

variety of domains [e.g. 16–18]. As such, it might be expected that news reporting of well-known public figures influences people's perception of the risk of COVID-19 because they appeal especially well to both availability [19] and representativeness heuristics [10]. Indeed, a recent study [20] found that participants who had been exposed to the news of celebrity Tom Hanks being diagnosed with COVID-19 reported attitude changes, stressing it “highlighted the reality of COVID-19”, increasing their perception of both the severity of the situation, as well as their personal risk of the illness.

On October 2nd 2020 it was announced that the incumbent President of the United States of America, Donald Trump, a potentially influential denier of COVID-19 [21,22], had tested positive for SARS-CoV-2 and had been subsequently hospitalised with COVID-19 symptoms. This provided an almost natural experiment with which to study the effects of a salient exemplar on attitudes to COVID-19. Conveniently, as part of a different study, we were collecting survey data from U.S. participants, covering a range of COVID-19 attitudes, in the days before and after President Trump was hospitalised with the virus. Figure 1 provides a timeline of relative media interest in the event and the periods of data collection before and after the announcement for Studies 1 and 2. News article data was drawn from the media database Factiva (Dow Jones, New York), based on daily counts of articles from U.S. news sources mentioning ‘COVID’ or ‘Coronavirus’ and ‘hospital*’ or ‘diagnos*’ in the same paragraph as ‘Trump’.

Figure 1. Timeline of media coverage and data collection before and after President Trump tested positive for COVID-19.

An important nuance is offered by the study on Tom Hanks' diagnosis. While overall his COVID-19 diagnosis had a statistically significant effect on participants' attitudes, the authors specified that those who identified with Tom Hanks in particular were more likely to change their thoughts or COVID-related behaviours due to the announcement. Therefore, we might expect U.S. residents who identify more with President Trump (e.g. conservatives and Republicans), to be more likely to be influenced by the announcement of Trump's diagnosis and to possibly increase their perception of the risk and/or decrease their perception of COVID-19 being a hoax. In the words of a Trump supporter in Ohio: "To see he has it wakes you up a bit. Anyone can get it, even the president." [23]. Indeed, a layer of complexity is

added to the picture when considering the potential role of another common heuristic: political polarisation. Driven by polarisation, political orientation acts as a mental filter through which the information believed to be incompatible with one's predisposition is filtered out [24]. The ways that prominent people choose to frame issues can affect public perceptions [25] including such cues from leading politicians [26]. A recent study showed that public statements by President Trump affected opinions on climate change among conservatives in the United States [26]. During the ongoing pandemic Trump has predominantly downplayed the risk of the virus [22] and a survey by the Pew Research Center found that U.S. residents who relied upon President Trump and his task force for information around COVID-19 were more likely to believe that the risk from the disease was overestimated [27].

Similarly, in counties with more Trump voters, residents were less prone to look for coronavirus information or respect physical distancing [28] and a study examining the association between political ideology and perceptions of COVID-19 found that right-wing political orientation was associated with lower perceived virus severity, and greater beliefs that the spread of the virus was a conspiracy [29].

Due to the likely effect of political polarisation, we expect that the diagnosis of President Trump might have had different effects on liberals and conservatives, leading us to include political orientation as an interaction term when exploring the effect of Trump's COVID-19 diagnosis on both risk perception and hoax beliefs.

In a similar way to risk perception, cues from partisan elites are capable of fostering conspiracy beliefs. In the early days of the pandemic, President Trump referred to COVID-19 as "their [Democrats'] new hoax", although there was then dispute about what precisely he had meant by the phrase [30], and repeatedly likened the threat to the common 'flu [31]. This

leads to a second question of interest, namely whether President Trump's positive diagnosis changed beliefs among U.S. residents in the pandemic being a hoax, whilst controlling for demographic factors and general susceptibility to misinformation.

There is also evidence that factors such as education [32,33], gender [34], and age [35,36] play a consistent and important role in influencing risk perception, particularly in relation to health. We thus also include these demographics in our analyses.

We present here two studies which examine whether either COVID-19 risk perceptions or beliefs of COVID-19 being a hoax changed after President Trump's diagnosis with the disease. We also explore a potential interaction with political orientation, controlling for key demographics and susceptibility to misinformation. To our knowledge these are the first studies to empirically test the effects of an elite cue, i.e. that of President Trump testing positive for the disease, on beliefs around COVID-19.

Study context

Both studies draw on independent representative U.S. samples surveyed before and after Trump's diagnosis. The context for data collection were two replication studies by the research team, carried out as part of the Systematizing Confidence in Open Research and Evidence (SCORE) project [<https://www.cos.io/score>, 37], in which independent teams attempt to replicate specific results from studies in the social-behavioural sciences.

Importantly, the SCORE framework provides a two-step process for determining sample size and recruiting participants. Researchers attempting to replicate a study first recruit a sample large enough to provide 90% power to detect an effect 75% of the size of the effect reported

in the original study. Should the analysis of the data collected fail to replicate the original study result (i.e. no significant effect), the researchers then recruit a further tranche of participants, resulting in a total sample with 90% power to detect an effect size 50% of that reported in the original study.

The data presented in the current studies was collected in this manner. The first wave of data collection for both replication studies led to initial samples being recruited in the days before the announcement of Trump's diagnosis (Wave 1). In both cases, the target results of the studies failed to replicate, leading to the recruitment of further participants in the weeks following the announcements (Wave 2). Notably all waves were quota-sampled to be representative of the U.S. population in terms of age and gender (and ethnicity in Study 1). In this manner, we serendipitously collected data on COVID-19 beliefs among U.S. residents before and closely after the announcement that President Trump had been diagnosed with COVID-19. The following studies do not report the replication attempts themselves, but separately analyse data collected in the process, placed in a public project repository here: <https://osf.io/agztm/>.

Study 1: Risk perception and President Trump's Diagnosis

Methods

Participants and procedure

Participants were recruited through the panel provider Prolific (prolific.co), which provided national quota samples stratified by age, gender, and ethnicity. Wave one included 909 participants; wave two, 447 participants (different from those in wave one) giving a total

sample of $N = 1356$. These sample sizes were determined by the SCORE power analyses described above. Participants providing informed consent completed the survey on the Qualtrics survey platform.

Measures

All measures were consistent across both waves. Of relevance to the current study, participants completed a six-item COVID-19 risk perception index encompassing cognitive, affective, and temporal-spatial dimensions of risk perception, (example item: “Getting sick with the coronavirus/COVID-19 can be serious”; $\alpha = 0.81$) [4,34]. See supplementary materials for a full list of items. The survey included several COVID-19 related items which were not the focus of the current study (details of all measures collected in the projects that studies 1 and 2 are based on can be found in the OSF repository: <https://osf.io/agztm/>)

The survey also collected socio-demographic variables including gender (binary: male, female), age, self-reported political orientation (1=Very left wing/ liberal, 7=Very right wing/ conservative), and education level (self-reported, ranging from 1 = “no formal education above 16” to 7 = “PhD”).

Analysis

To investigate the effect of Trump's diagnosis on COVID-19 risk perception, as well as the role of political orientation and socio-demographic factors, we undertook a hierarchical regression approach. We first regressed risk perceptions onto wave, political orientation and demographic factors, testing whether risk perceptions differed between participants recruited before and after the announcement of Trump's diagnosis, controlling for political orientation

and demographic factors. We then added an interaction term to test if the effect of wave was conditional on political orientation. All analysis was conducted in R Version 1.2.5019

Results

Table 1 reports the results of the regression models (descriptive statistics and bivariate correlations shown in supplementary materials). Controlling for political orientation and socio-demographic factors, we find no significant effect of wave on risk perception (Model 1), indicating there was no significant difference in risk perception between participants recruited before and after announcement of Trump's COVID-19 diagnosis. We also find that the interaction between wave and political orientation was non-significant (Model 2), indicating that there was no significant difference in risk perception change between waves across the political spectrum.

However, we do see political orientation emerging as a significant predictor in model 1, showing that the further right participants were on the political spectrum, the lower their risk perception. We also find that older participants, more highly educated participants, and females expressed higher risk perception.

Table 1

Hierarchical regression results for COVID-19 risk perception

	COVID-19 Risk Perception	
	(1)	(2)
Intercept	4.77*** (4.43, 5.11)	4.73*** (4.37, 5.08)
Gender(female)	0.24*** (0.12, 0.35)	0.23*** (0.12, 0.35)
Age	0.005* (0.001, 0.01)	0.005* (0.001, 0.01)
Education	0.12*** (0.07, 0.17)	0.12*** (0.07, 0.17)
Political Orientation	-0.21*** (-0.24, -0.17)	-0.20*** (-0.24, -0.15)
Wave	0.05 (-0.08, 0.17)	0.18 (-0.15, 0.51)
Wave*Political Orientation		-0.03 (-0.11, 0.04)
Observations	1,340	1,340
Adjusted R2	0.12	0.12

* $p < .05$, ** $p < .01$, *** $p < .001$

Unstandardised estimates (95% CI) shown

Discussion

We did not find evidence that news of President Trump's COVID-19 diagnosis affected U.S. residents' risk perception, no matter where on the political spectrum. A possible explanation for this lack of effect is the potential role of another common heuristic: elite cues. These are a phenomenon by which positions endorsed by prominent leaders guide someone's evaluation of what is true or false [38]. A specific kind of elite cue dynamic may have been created by the way in which the president framed his announcement. Despite admitting his COVID-19 infection, President Trump publicly projected the image of someone not anxious

about the disease and optimistic about his recovery [39]. This framing may have not projected any difference from his previous statements about the virus, which had already caused many of his followers to believe that the risk from the virus was being overestimated [27]. It is also possible that the fact that the 74-year-old president fell into a high-risk category for COVID-19 might have lead many U.S. residents (in lower risk groups) to not feel a need to change their opinion about the risk posed by the disease following President Trump's diagnosis.

The significant predictive effect of political orientation indicates that political factors are associated with COVID-19 risk perception. In this instance, the more right-leaning someone was in the United States, the lower their COVID-19 risk perception, controlling for effects of age, gender, education, and wave of data collection. This finding is in line with previous research showing that being on the right wing of the political spectrum is associated with lower perceived virus severity [29] and lower risk perception [34]. Our findings of the role of socio-demographic factors in risk perception link to previous research on education [32,33], gender [4,34], and age [35,36].

Study 2: Hoax Belief and President Trump's Diagnosis

In addition to investigating potential effects of President Trump's diagnosis of COVID-19 infection on risk perception, in Study 2 we examine potential effects on beliefs about whether or not the pandemic was a hoax. President Trump had previously referred to COVID-19 as a "hoax" [21] and conspiracy endorsements from prominent people can affect said beliefs in others. Study 2 therefore aimed to investigate whether President Trump's positive diagnosis and treatment for the disease changed beliefs among U.S. residents on the

pandemic being a hoax, whilst controlling for demographic factors and general susceptibility to misinformation.

Methods

Participants and procedure

Participants for this study were recruited through the ISO certified online panel provider Respondi and quota sampled to be representative of the U.S. population in terms of age and gender. Participants who reported not paying attention ($n = 96$) in response to an attention check item did not count towards quotas and were excluded from analyses (repeating analyses with these participants included did not substantially alter results, see below). The resulting sample size was 949 participants for wave 1 and 1191 participants for wave 2, amounting to a total sample of $N = 2140$. As for study 1, sample size for both waves was determined by the larger project under which data were collected. All participants provided informed consent and completed the survey on the Qualtrics survey platform.

Measures

All measures were consistent across both waves. The dependent variable in our analyses was hoax belief. Participants were asked the extent to which they believed the coronavirus pandemic to be a hoax (1 = *definitely not*, 6 = *definitely*). [40,41] Socio-demographic variables collected included gender (binary: male, female), age, self-reported political orientation (1=Very left wing/ liberal, 7=Very right wing/ conservative), and education level (self-reported, ranging from 1 = *Did not complete high school* to 5 =

Graduate or Professional degree). General susceptibility to misinformation was tested using the MIST measure [42] via a composite variable. Participants were exposed to twenty news headlines (10 real and 10 fake) and asked to rate each of them as either true or false. The number of correct responses was indexed as a 0-10 measure of misinformation susceptibility [42]

Analysis

As in Study 1 we report a hierarchical series of regression models. We first regress hoax belief onto wave (before or after announcement), controlling for political ideology and demographic variables. We then add susceptibility to misinformation in a subsequent model. Lastly, as in Study 1, we add an interaction term between wave and political ideology to explore potential diverging effects for people across the political spectrum. All analysis was done in R version 4.0.3 (2020-10-10).

Results

Results from the regression models are reported in Table 2. Considering only wave and control variables as predictors of hoax belief (Model 1), as well as when including susceptibility to misinformation as an additional predictor (Model 2), we do not find a significant effect of wave of recruitment (before or after Trump's COVID-19 announcement). However, we observe a significant interaction between wave and political orientation (Model 3) indicating that the effect of wave was moderated by political views. The more liberal/left wing an individual in their political orientation, the less difference there was in hoax beliefs between waves; however, the more conservative/ right wing of the political spectrum, the bigger the difference, with hoax belief being lower after Trump's announcement, compared

to before. The interaction plot in Figure 2 illustrates this pattern of effects. To examine at which point(s) on the political spectrum a significant difference between waves emerges, we conducted a Johnson-Neyman analysis [43]. We report a Johnson-Neyman interval of [-1.27, 5.25], such that that the effect of the wave factor in our interaction model becomes significant when political orientation is outside this interval. This indicates that wave has a significant ($p < .05$) effect on hoax belief among those reporting conservative (6) or very conservative (7) political views on our answer scale. There is no difference between waves for liberals (see Figure S1 in the supplementary materials).

Additionally, our results indicate a significant effect of political orientation and susceptibility to misinformation overall such that the more conservative/ right wing leaning a person and the more susceptible to misinformation generally, the higher hoax beliefs are.

Table 2

Hierarchical regression results for hoax belief

	Belief in COVID-19 being a hoax		
	(1)	(2)	(3)
Constant	1.65*** (1.32, 1.97)	0.77*** (0.46, 1.09)	0.61*** (0.26, 0.96)
Gender (female)	-0.11* (-0.23, -0.0003)	-0.16** (-0.27, -0.05)	-0.16** (-0.27, -0.05)
Age	-0.02*** (-0.02, -0.01)	-0.01*** (-0.01, -0.01)	-0.01*** (-0.01, -0.01)
Education	0.005 (-0.04, 0.05)	0.06** (0.02, 0.11)	0.06** (0.02, 0.11)
Political orientation	0.28*** (0.24, 0.31)	0.18*** (0.14, 0.21)	0.22*** (0.17, 0.27)
Wave	-0.03 (-0.15, 0.08)	-0.04 (-0.15, 0.07)	0.26 (-0.02, 0.54)
Misinformation susceptibility		0.30*** (0.27, 0.33)	0.30*** (0.27, 0.33)
Political orientation*Wave			-0.08* (-0.14, -0.01)
Observations	2,123	2,123	2,123
Adjusted R ²	0.11	0.23	0.23

* $p < .05$, ** $p < .01$, *** $p < .001$

Unstandardised estimates (95% CI) shown

Figure 2. Interaction effects between wave and political orientation. Estimated marginal means and 95%CI shown. For visualization purposes the figure shows levels of hoax belief across waves for liberals and conservatives using answer points 2 and 6, respectively, on the political orientation answer scale used in the surveys. A visualization showing the values of political orientation at which the effect of wave on hoax belief is statistically significant (Johnson-Neyman interval) is provided in the supplementary materials.

Belief that COVID-19 was a hoax was skewed positively in the overall sample, with most participants having low belief in COVID-19 being a hoax. Therefore, we supplemented our analysis by fitting an interaction model in which log transformed hoax belief was regressed onto predictors. This resulted in the same pattern of significant effects supporting the robustness of the findings. We additionally repeated the analysis including attention

check failures as another robustness check. Again, we find the same pattern of results (robustness check analyses are available in Table S7 in the supplementary materials).

As a further robustness check, we repeated analyses using reported party affiliation (Democrat, $n = 775$; Republican, $n = 701$; Independent, $n = 668$) rather than liberal-conservative orientation as a measure of political views. Results were consistent; Republicans in Wave 2 expressed lower belief that COVID-19 is a hoax than Republicans in Wave 1 (controlling for other factors). There was no significant difference across waves for Democrats or Independents (see Figure S2 and Tables S7-8 in the supplementary materials).

Discussion

Our results did not show a main effect President Trump's diagnosis on hoax beliefs; however, we do find a significant interaction. Regression results suggest that the more participants leant to the right of the political spectrum, the more their belief in COVID-19 being a hoax decreased after the announcement that President Trump had tested positive, controlling for their domain-general susceptibility to misinformation, age, gender and education. Left-leaning participants, meanwhile exhibited little change in their belief about COVID-19 being a hoax. In the same way that those more likely to change their attitudes following Tom Hanks' COVID-19 diagnosis were participants who most identified with him [20], it seems likely that politically right-leaning participants in the current study identified more closely with President Trump making his exemplar more vivid and influential in their mind and hence having more influence on their beliefs, in line with previous literature on political and elite cues.

The finding that general susceptibility to misinformation was a significant predictor of hoax beliefs, suggests that general susceptibility to misinformation may spill over into the

COVID-19 domain. This is in line with previous findings that predisposition to any form of misinformation is an important factor driving political motivated reasoning [26]. Our finding that more right-wing political orientation was associated with higher hoax beliefs is in line with prior research that has shown effects on beliefs that the spread of the virus was a conspiracy [29].

General Discussion

Across two surveys conducted between September 2020 and October 2020 we were able to investigate U.S. residents' attitudes to COVID-19 and, fortuitously, how these were affected by the announcement that President Trump had been diagnosed with the disease.

Consistent with previous research [29,34], political orientation was associated with both risk perception and belief in COVID-19 being a hoax. While risk perception was relatively high on average, and belief in COVID-19 being a hoax low, across the time period of data collection, participants identifying themselves as politically left-leaning had lower belief in COVID-19 being a hoax and higher perception of the risk of COVID-19 than those who identified themselves as politically right-leaning. We also replicate prior findings regarding some known predictors of risk perception [4,32–36,44] the demographics triad of gender, age and education all had a significant effect on COVID-19 risk perception. Predictors of higher risk perception were being female, being older and more highly educated. Demographic predictors of higher belief in COVID-19 being a hoax across our models were being male and being younger.

Comparing participants surveyed before and after President Trump's COVID-19 diagnosis, we did not find a statistically significant difference in risk perception, but we did find a statistically significant effect on beliefs in the virus being a hoax in politically right-leaning participants. As such, the effect of President Trump's diagnosis on the belief that the pandemic is a hoax was limited and only significant when considered in interaction with political orientation. This finding is in line with previous research pointing at the importance of elite cues and political motivated reasoning in influencing belief in misinformation [36].

Our findings suggest that, following President Trump's diagnosis, some U.S. residents changed their beliefs in COVID-19 being a hoax, but not their risk perception related to the virus. This suggests a difference between believing that the virus is not serious, and all together believing that the virus isn't real. President Trump testing positive while still claiming in the media that he didn't feel threatened by his infection may have caused some of his followers to adjust their view to one that the virus is tangible, but not presenting a significant risk if even a man with several risk factors for a poor outcome did not appear to be seriously affected by it. If so, this would be an example of people using elite cues as a proxy to determine their risk perception [29].

Some support for the possibility that President Trump's influence can have differential effects on beliefs that COVID-19 is a hoax and beliefs that it is not serious can be found from a Twitter analysis study [45] looking at the proportion of tweets claiming 1) that the virus was not real, 2) that the virus was not serious. Before President Trump tested positive, 19.5% of tweets claimed that COVID-19 was a hoax, and 13.3% that it was not serious, but after his diagnosis, only 3.1% and 1.4% did respectively which would suggest a

holistic change across both domains. However, after the president subsequently tweeted, “Don’t be afraid of COVID-19”, this effect was slightly reversed, with 10.0% of tweets claiming the virus is a hoax and up to 12.0% claiming it was not serious. Thus it appears that the way in which the President framed his infection may have reduced the risk perception while still decreasing the belief in COVID-19 being a hoax.

The finding that general susceptibility to misinformation significantly correlates with belief in COVID-19 being a hoax suggests that efforts to reduce overall misinformation susceptibility, such as inoculation [46], might reduce belief that the virus is a hoax.

Our studies have several limitations. The collection of data across two waves per study could only capture changes in COVID-19 attitudes days before and after President Trump tested positive without the added granularity of a third wave following his several statements reassuring the public about his state after treatment in hospital (as in the Twitter study above). It is therefore possible that the lack of a statistically significant effect on risk perception was due to the time period being too short or to other signalling from the President between the two waves (such as him indicating that he did not feel his life was in danger even when infected [47]). Our correlational study design also does not allow any observed differences between the two waves to be causally attributed to President Trump’s diagnosis. While we controlled for a number of factors, it is possible that such differences could be attributable to different baseline beliefs between the two groups of participants, or other external events not related to President Trump.

Conclusion

A primary step in any initiative aiming to improve access to reliable information and reduce the influence of misinformation about public health information is to understand the patterns driving people's belief and trust in information from different sources. The finding that political orientation influenced the way in which participants interpreted President Trump's announcement emphasises how much difference messages from elite 'influencers' can make in altering attitudes to factual information. The current study brings a nuance to the dichotomous view of left-wing/right-wing divide as the core driver of attitudinal differences in the United States [48], showing that despite confirmation bias and political biases, politically right-leaning participants exhibited a difference in their belief that COVID-19 was a hoax after being exposed to the exemplar of President Trump.

References

1. Ghebreyesus TA. 2020 Munich Security Conference. Munich.
2. Latkin CA, Dayton L, Moran M, Strickland JC, Collins K. 2021 Behavioral and psychosocial factors associated with COVID-19 skepticism in the United States. *Curr. Psychol.* (doi:10.1007/s12144-020-01211-3)
3. Ruiz JB, Bell RA. 2021 Predictors of intention to vaccinate against COVID-19: Results of a nationwide survey. *Vaccine* (doi:10.1016/j.vaccine.2021.01.010)
4. Dryhurst S, Schneider CR, Kerr J, Freeman ALJ, Recchia G, van der Bles AM, Spiegelhalter D, van der Linden S. 2020 Risk perceptions of COVID-19 around the world. *J. Risk Res.* , 1466–4461. (doi:10.1080/13669877.2020.1758193)
5. Liu BF, Kim S. 2011 How organizations framed the 2009 H1N1 pandemic via social and traditional media: Implications for U.S. health communicators. *Public Relat. Rev.* **37**, 233–244. (doi:10.1016/j.pubrev.2011.03.005)
6. Snizek J, Wilkins D, Wadlington P, Baumann M. 2002 Training for Crisis Decision-Making: Psychological Issues and Computer-Based Solutions. *J. Manag. Inf. Syst.* **18**, 147–168.
7. Kaufhold M-A, Rupp N, Reuter C, Habdank M. 2020 Mitigating information overload in social media during conflicts and crises: design and evaluation of a cross-platform alerting system. *Behav. Inf. Technol.* **39**, 319–342. (doi:10.1080/0144929X.2019.1620334)
8. Kahneman D, Slovic P, Tversky A. 1982 *Judgment under Uncertainty*. Cambridge University Press. (doi:10.1017/CBO9780511809477)
9. Starcke K, Brand M. 2012 Decision making under stress: A selective review. *Neurosci. Biobehav. Rev.* **36**, 1228–1248. (doi:10.1016/j.neubiorev.2012.02.003)

10. Zillmann D. 2006 Exemplification Effects in the Promotion of Safety and Health. *J. Commun.* **56**, S221–S237. (doi:10.1111/j.1460-2466.2006.00291.x)
11. Myrick JG. 2017 Public Perceptions of Celebrity Cancer Deaths: How Identification and Emotions Shape Cancer Stigma and Behavioral Intentions. *Health Commun.* **32**, 1385–1395. (doi:10.1080/10410236.2016.1224450)
12. Noar SM, Althouse BM, Ayers JW, Francis DB, Ribisl KM. 2015 Cancer Information Seeking in the Digital Age. *Med. Decis. Mak.* **35**, 16–21. (doi:10.1177/0272989X14556130)
13. Cohen EL. 2020 Stars—They're Sick Like Us! The Effects of a Celebrity Exemplar on COVID-19-Related Risk Cognitions, Emotions, and Preventative Behavioral Intentions. *Sci. Commun.* **42**, 724–741. (doi:10.1177/1075547020960465)
14. Rahmani G, McArdle A, Kelly JL. 2018 The Hugh Jackman Effect—The Impact of Celebrity Health Disclosure on Skin Cancer Awareness. *Dermatologic Surg.* **44**, 1039–1040. (doi:10.1097/DSS.0000000000001348)
15. Noar SM, Willoughby JF, Myrick JG, Brown J. 2014 Public Figure Announcements About Cancer and Opportunities for Cancer Communication: A Review and Research Agenda. *Health Commun.* **29**, 445–461. (doi:10.1080/10410236.2013.764781)
16. Aust CF, Zillmann D. 1996 Effects of Victim Exemplification in Television News on Viewer Perception of Social Issues. *Journal. Mass Commun. Q.* **73**, 787–803. (doi:10.1177/107769909607300403)
17. Spence PR, Lachlan KA, Westerman D, Lin X, Harris CJ, Sellnow TL, Sellnow-Richmond DD. 2015 Exemplification effects: responses to perceptions of risk. *J. Risk Res.* , 1–21. (doi:10.1080/13669877.2015.1100658)
18. Westerman D, Spence PR, Lachlan KA. 2009 Telepresence and the Exemplification

- Effects of Disaster News. *Commun. Stud.* **60**, 542–557.
(doi:10.1080/10510970903260376)
19. Yoo W. 2016 The influence of celebrity exemplars on college students' smoking. *J. Am. Coll. Heal.* **64**, 48–60. (doi:10.1080/07448481.2015.1074238)
 20. Myrick JG, Willoughby JF. 2021 A Mixed Methods Inquiry into the Role of Tom Hanks' COVID-19 Social Media Disclosure in Shaping Willingness to Engage in Prevention Behaviors. *Health Commun.* , 1–9. (doi:10.1080/10410236.2020.1871169)
 21. Strauss D, Laughland O. 2020 Trump calls coronavirus criticism Democrats' 'new hoax' and links it to immigration. *Guard.*, February.
 22. Rutledge PE. 2020 Trump, COVID-19, and the War on Expertise. *Am. Rev. Public Adm.* **50**, 505–511. (doi:10.1177/0275074020941683)
 23. Scheyder E, Brown N. 2020 'Anyone can get it,' Trump supporters shocked at diagnosis, unwavering in support.
 24. Druckman JN, Peterson E, Slothuus R. 2013 How elite partisan polarization affects public opinion formation. *Am. Polit. Sci. Rev.* **107**, 57–79.
(doi:10.1017/S0003055412000500)
 25. Chong D, Druckman JN. 2007 Framing Theory. *Annu. Rev. Polit. Sci.* **10**, 103–126.
(doi:10.1146/annurev.polisci.10.072805.103054)
 26. Shao W, Hao F. 2020 Confidence in political leaders can slant risk perceptions of COVID–19 in a highly polarized environment. *Soc. Sci. Med.* **261**, 113235.
(doi:10.1016/j.socscimed.2020.113235)
 27. Pew Research Center. 2020 Americans Who Rely Most on White House for COVID-19 News More Likely to Downplay the Pandemic.
 28. Barrios J, Hochberg Y. 2020 Risk Perception Through the Lens of Politics in the Time

- of the COVID-19 Pandemic. (doi:10.3386/w27008)
29. Calvillo DP, Ross BJ, Garcia RJB, Smelter TJ, Rutchick AM. 2020 Political Ideology Predicts Perceptions of the Threat of COVID-19 (and Susceptibility to Fake News About It). *Soc. Psychol. Personal. Sci.* **11**, 1119–1128. (doi:10.1177/1948550620940539)
 30. Rieder R. 2020 Trump and the 'New Hoax'.
 31. Rieder R. 2020 Trump's Deceptive Comparison of the Coronavirus to the Flu.
 32. Georgiou N, Delfabbro P, Balzan R. 2020 COVID-19-related conspiracy beliefs and their relationship with perceived stress and pre-existing conspiracy beliefs. *Pers. Individ. Dif.* **166**. (doi:10.1016/j.paid.2020.110201)
 33. van Prooijen JW. 2017 Why Education Predicts Decreased Belief in Conspiracy Theories. *Appl. Cogn. Psychol.* **31**, 50–58. (doi:10.1002/acp.3301)
 34. Schneider CR, Dryhurst S, Kerr J, Freeman ALJ, Recchia G, Spiegelhalter D, van der Linden S. 2021 COVID-19 risk perception: a longitudinal analysis of its predictors and associations with health protective behaviours in the United Kingdom. *J. Risk Res.* , 1–20. (doi:10.1080/13669877.2021.1890637)
 35. Jolley D, Douglas KM, Skipper Y, Thomas E, Cookson D. 2021 Measuring adolescents' beliefs in conspiracy theories: Development and validation of the Adolescent Conspiracy Beliefs Questionnaire (ACBQ). *Br. J. Dev. Psychol.* , bjd.12368. (doi:10.1111/bjdp.12368)
 36. Galliford N, Furnham A. 2017 Individual difference factors and beliefs in medical and political conspiracy theories. *Scand. J. Psychol.* **58**, 422–428. (doi:10.1111/sjop.12382)
 37. Alipourfard N *et al.* 2021 Systematizing Confidence in Open Research and Evidence

- (SCORE). *SocArXiv* , 1–33.
38. Gilens M, Murakawa N. 2002 Elite Cues and Political Decision-Making. *Res. Micropolitics* **6**, 15–49.
 39. Mason J, Holland S. 2020 Trump says catching COVID-19 was ‘blessing from God’. *Reuters*.
 40. Stanley M, Barr N, Peters K, Seli P. 2020 Analytic-Thinking Predicts Hoax Beliefs and Helping Behaviors in Response to the COVID-19 Pandemic. *PsyArXiv* **March 30**. (doi:<https://doi.org/10.31234/osf.io/m3vth>)
 41. Stanley ML, Barr N, Peters K, Seli P. 2021 Analytic-thinking predicts hoax beliefs and helping behaviors in response to the COVID-19 pandemic. *Think. Reason.* **27**, 464–477. (doi:10.1080/13546783.2020.1813806)
 42. Maertens R, Götz F, Schneider CR, Roozenbeek J, Kerr JR, Stieger S, III WPM, Drabot K, Linden S van der. 2021 The Misinformation Susceptibility Test (MIST): A psychometrically validated measure of news veracity discernment.
 43. Bauer DJ, Curran PJ. 2005 Probing Interactions in Fixed and Multilevel Regression: Inferential and Graphical Techniques. *Multivariate Behav. Res.* **40**, 373–400. (doi:10.1207/s15327906mbr4003_5)
 44. Finucane ML, Slovic P, Mertz CK, Flynn J, Satterfield TA. 2000 Gender, race, and perceived risk: The ‘white male’ effect. *Heal. Risk Soc.* **2**, 159–172. (doi:10.1080/713670162)
 45. Ugarte DA, Cumberland WG, Flores L, Young SD. 2021 Public Attitudes About COVID-19 in Response to President Trump's Social Media Posts. *JAMA Netw. Open* **4**, e210101. (doi:10.1001/jamanetworkopen.2021.0101)
 46. van der Linden S, Roozenbeek J, Compton J. 2020 Inoculating Against Fake News

About COVID-19. *Front. Psychol.* **11**. (doi:10.3389/fpsyg.2020.566790)

47. BBC. 2020 Trump Covid: President downplays virus on leaving hospital.
48. Iyengar S, Lelkes Y, Levendusky M, Malhotra N, Westwood SJ. 2019 The Origins and Consequences of Affective Polarization in the United States. *Annu. Rev. Polit. Sci.* **22**, 129–146. (doi:10.1146/annurev-polisci-051117-073034)