Five years after Covid-19: what have we learned (and forgotten)?

Wolbers, J.J.; Kuipers, S.L.

EDITORIAL

Five Years After Covid-19: What Have We Learned (and Forgotten)?

Jeroen Wolbers | Sanneke Kuipers

Institute of Security and Global Affairs, Leiden University, The Hague, the Netherlands

Correspondence: Jeroen Wolbers (j.j.wolbers@fgga.leidenuniv.nl)

1 | Introduction

As we pass 5 years since the COVID-19 pandemic raged across the world, the global crisis and disaster research community seems to have returned back to normal. The pandemic marked a unique episode in our lives, characterized by face masks, infection curves, lockdowns, test facilities, and vaccination campaigns, but also homeschooling, video calls, and online teaching. At the height of the health crisis, we witnessed something on a scale we had never seen before: medical systems getting overrun, overcrowded intensive care units, cooling trucks being loaded with bodies, and a surge of infections and fatalities in elderly homes. Some nursing homes were hit so hard, hardly any elderly were left. By the time vaccines became available, it marked the beginning of the end of the crisis. Still, we witnessed massive protests, vaccine hesitancy, and anti-science movements. It turned out not only the virus, but also the crisis itself morphed before our eyes from a health crisis to an economic crisis, to a solidarity crisis, and a crisis of trust and authority.

As the pandemic came to an end, most of us restarted our work and things returned back to normal. Classes returned on campus, fieldwork was possible again, and research proposals on other topics were being developed. The only relic that seems to have survived is our home office usage. Five years after, COVID-19 seems like a distant memory for many. For some, still suffering from long-COVID, from related health issues, or from the loss of family or friends, the stark reality may just have started to sink in.

Crisis researchers have long warned about the interconnected nature of modern risks, the pandemic brought this reality into sharp focus. For many scholars, the pandemic was not just a health crisis, but also a profound test of governance, resilience, and social cohesion. Health systems were the initial epicenter, but the ripples spread rapidly. Economic shocks, mental health problems, domestic violence, political instability, and social inequities all emerged—partially as a consequence of pandemic mitigation policies. COVID-19 exposed vulnerabilities across public health systems, supply chains, and political structures, while also highlighting the essential role of science, communication, and community action in navigating this complex transboundary crisis. The pandemic called upon the academic community in a broad sense to apply or expand their knowledge to the crisis at hand.

Now 5 years after, we may question what knowledge and insights stuck with our academic research field in risk, crisis and disaster? But also: what might we have already forgotten? The post-pandemic landscape presents important lessons learned and new questions that call for reflection. In the post-COVID era, we should evaluate, harness lessons, and invest in pandemic preparedness. Yet, as the immediacy of the crisis fades, we witness a new geo-political reality that is rapidly outflanking COVID's urgency. Instead of investment in pandemic preparedness, we witness budget-cuts, bans on international health research cooperation and shifting priorities towards defense and homeland security. Are we reliving the well-known fallacy we have seen so often after crises, are we only as good as the last crisis?

In our earlier COVID-19 bibliometric review editorial (Kuipers et al. 2022), we witnessed a surge of COVID-19 studies unprecedented for our field. The pandemic gathered more attention than any previous major crisis or disaster. In this editorial, we compared the spike of interest to 9/11 and Hurricane Katrina, both landmark events in our field. In Figure 1,
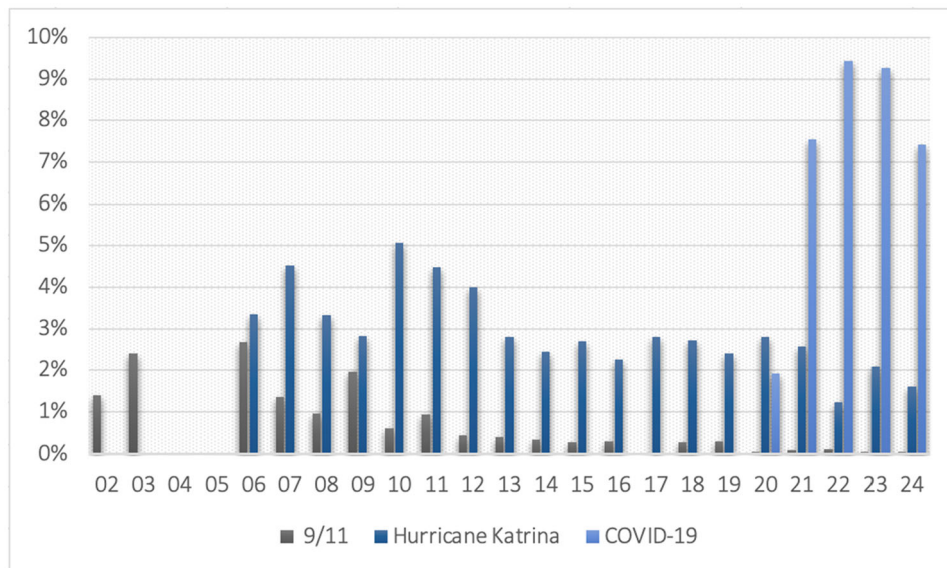
FIGURE 1 | Updated graph (+23 & 24) from our editorial in 2022, on: The percentage of publications in the crisis and disaster research fields focused on 9/11, Hurricane Katrina, and COVID-19.

now updated with publications from 2023 to 2024, we see that the spike of interest is already past its peak. Will it decline as quickly as it emerged? What lessons will stick with us and continue to influence the field, and what will we forget and leave behind?

We highlighted that several well-known literatures in our field were also applied to COVID-19, such as on risk management, crisis communication, governance, resilience, and vulnerability. The pandemic also gave rise to new topics, including citizen behavior, state power, and the business and mental health impact of crisis measures. It was interesting to see how we could identify and classify a range of basic, motor, and niche themes that were prominent during the peak of the COVID-19 pandemic (Kuipers et al. 2022). Crisis communication was a particularly important basic theme in the literature, driven by frequent press conferences held by prime ministers, sometimes accompanied by virologists (Reyes Bernard et al. 2021). Such political-level crisis communication emerged as key moments to introduce various measures and provide meaning to the situation. In addition, learning emerged as a key basic theme, particularly regarding the lessons from SARS and MERS that were identified and implemented during the first wave of COVID-19 (Feitelson et al. 2022). Indeed, countries that had previously experienced SARS or MERS seemed better equipped to respond in the initial stages of the pandemic. A third basic theme was vulnerability, when research once again demonstrated that disasters such as COVID-19 affect societies unequally, underscoring the need for policies to address and mitigate these inequalities.

Beyond these long-standing basic themes, we identified several motor themes that instigated progress in the field as new lessons emerged during the pandemic. A key motor theme was mental health, which gained prominence as lockdowns and quarantine measures limited social interaction. For example, Thomas and Terry (2022) clearly demonstrated that mass quarantine was associated with increased levels of depression, anxiety, and

posttraumatic stress in society. In contrast, social cohesion also emerged as a motor theme, highlighting how communities came together in the wake of the pandemic (Aruta et al. 2022). This aligns with traditional disaster sociology studies emphasizing the role of altruism in the wake of disasters.

Another motor theme that contributed to progress in the field centered around the effects of behavioral cues aimed at ensuring compliance with public health restrictions, such as frequent handwashing, mask-wearing, and social distancing. While already common in several Asian countries, these measures were new to many parts of the world and required shifts in behavior. A range of studies investigated what type and form of communication was most effective in soliciting compliance. Findings indicated that clear communication is crucial for fostering community resilience (Fenxia 2022) and that individuals actively engaged in information-seeking were more likely to follow government recommendations (Zhao and Tsang 2022). Moreover, trust in government was a decisive factor influencing whether people actively sought and shared information (Wang and Xiong 2022).

Finally, we also identified a range of niche themes that, while relatively isolated in the literature, remain relevant to the study of the pandemic. One such niche theme is the role of surveillance. A critical aspect of pandemic preparedness is the ability to set up a reliable and effective surveillance system to monitor virus propagation. To collect such data, many governments asked citizens to install contact-tracing apps on their phones, which recorded interactions with others. Additionally, traffic flows, public transportation usage, and sewer systems were closely monitored. The lack of accurate data on virus propagation during the pandemic vividly demonstrated the challenge of balancing openness and closure, as well as privacy and effective monitoring, especially when the need for surveillance increases in times of crisis (Klauser and Pauschinger 2022). It is particularly alarming, in this light, that exactly the capacity and resources for international alerts, data exchange, and

cooperation have come under severe strain in the current geopolitical context.

In our review we ended with the question if COVID-19 was a game-changer. Did we return to a "new normal" when the crisis slowly faded out? 5 years after the pandemic ended, we can begin to answer that question. In this editorial, we bundle a large group of new COVID-19 studies in Risk, Hazards & Crisis in Public Policy to reflect on this question.

A recurring theme in these studies is the critical role of local governments in managing the immediate and long-term impacts of the pandemic. While in many countries the direction of the pandemic response was decided on by the central government, local actors played a crucial role in translating and implementing the policy in our local communities. The study of Chatterjee and Arapis (2025, this issue) entitled "Crisis communication during COVID-19: Insights from Pennsylvania and Florida local governments" on decentralized crisis communication in two American states clearly showed the importance of this level of government. Based on data from the Pandemic Management Survey, the authors show how concerns related to school and business closures, as well as beliefs in their efficacy, had a positive impact on the adoption of communication strategies. The articulation, explanation, and implementation of policies that had a stark impact on our societies lied in the hands of local governments. The Chatterjee and Arapis study demonstrates how local capacity and autonomy are central to effective crisis response.

Yet communication alone is not enough; local governments themselves had to adapt rapidly to evolving conditions. Research from Israel by Zaychik et al. (2025, this issue) on "Innovation and adaption in local governments in the face of COVID-19: Determinants of effective crisis management" examined what structural methods local governments used that excelled at managing the crisis by limiting virus propagation and stimulating vaccination acceptance. It shows the importance of social capital in reducing community vulnerability to crisis. The importance of social capital and that some groups are more vulnerable than others, just as in other types of disasters, indeed also appeared from our pandemic preparedness review in 2022. Successful municipalities had their crisis apparatus up to speed, by fostering a flexible organizational culture, embracing digitalization, and maintaining collaborative relationships with other agencies. This adaptability proved essential in navigating the uncertainty of the pandemic's early months.

Political culture and governance structures also shaped responses to the crisis in profound ways. In the United States, perceptions of the federal government's response were strongly influenced by political affiliation, as shown by Hildebrand and Malone (2025, this issue) in "Representative bureaucracy and COVID-19 among local emergency response professionals." Local emergency management officials in Republican-leaning areas were more likely to view the federal response as effective, while those in Democratic-leaning areas were more critical. This reflects the theory of representative bureaucracy, which suggests that government actors' responses to crises are shaped by the political norms and values of their constituencies. The political dimension of crisis management extended beyond the

US context, as shown by an extensive study of 150 countries by Kaim and Kubbe (2025) in "Who is the Master of Disasters? A Comparative Analysis of COVID-19 Crisis Response and Resilience in Democracies, Hybrid Regimes, and Authoritarian States" in the previous RHCPP issue. A comparative analysis of responses across democracies, hybrid regimes, and authoritarian states reveals that while authoritarian regimes were able to mobilize resources more quickly, they struggled with sustaining recovery efforts due to weaker institutional foundations and lower public engagement. Meanwhile, democratic systems tended to demonstrate greater long-term resilience due to higher levels of transparency and public trust that aided disaster recovery. This comparative study clearly points out that democratic governance underpins effective long-term disaster management, and achieving holistic resilience requires integrated strategies that prioritize both economic stability and sustainability.

Community resilience emerged as another key factor in shaping the pandemic response. In a study by Diko et al. (2025, this issue) called "A tale of two disasters: Unpacking how social learning from the Ebola epidemic shaped COVID-19 response in informal settlements in Freetown," the experience of the Ebola outbreak in Sierra Leone provided a valuable foundation for responding to COVID-19. Similar to many Asian countries where the experience with SARS helped to organize a quicker response, helpful disaster response subcultures emerged in Sierra Leone. Residents and community-based organizations leveraged lessons from the Ebola crisis to organize local responses despite limited government capacity. This insightful case study in an understudied part of the world, reinforces the importance of social learning in disaster preparedness. Prior disaster experiences consolidate memory and foster adaptive capacity within communities. The role of learning and memory also surfaced in the context of regional cooperation within the United States, as described by McOmber and Kirchhoff (2025, this issue) in "State Pandemic Pods: US regional coalitions and their responses to the COVID-19 pandemic." Coalitions such as the Multistate Council and the Western States Pact facilitated collective decision-making and resource sharing during the pandemic based on earlier experiences. However, these coalitions also revealed the limits of institutional memory and path dependency when being adopted to a new type of crisis, as these coalitions sometimes also struggled to adapt to the unique challenges of COVID-19.

Governments and health authorities during COVID-19 strived to get the general population to comply to all kinds of health restrictions and protective measures. According to Silver et al. (2025, this issue) in their study "The influence of environmental cues on behavioral response: An assessment of the Protective Action Decision Model in the context of COVID-19," based on a longitudinal survey during 2020–2021 in New York State, behavioral responses were shaped by both environmental cues and perceived threat severity. Their research using the Protective Action Decision Model (PADM) demonstrates that visible changes in the built environment, such as warning signs and hand sanitizing stations, encouraged protective behavior, such as masking and social distancing. Interestingly, these behaviors were influenced more directly by environmental cues than by perceived threat severity, challenging key assumptions of the

PADM. This finding suggests that in public health emergencies, direct visual prompts may be more effective in encouraging protective behavior than efforts to raise awareness about the severity of the threat.

The pandemic's socioeconomic impacts also hit the area of food security, as shown by Vincent Canwat (2025, this issue) in "Food Security Effects of Covid-19 Lockdown: Causal Pathways and Vulnerability." Lockdowns disrupted supply chains and income sources, reducing access to food and forcing many households in Uganda to shift from higher-quality to cheaper, less nutritious options. While food availability increased in rural areas due to greater participation in farming, urban and economically vulnerable populations experienced a decline in dietary quality and stability. This highlights the trade-offs between public health measures and economic stability in crisis contexts and underscores the need for more integrated approaches to managing health and socio-economic impacts. This study especially shows, once more, that vulnerable populations tend to be hit harder by a disaster, also in the area of food security.

When the acute phase of the COVID-19 pandemic ended, we entered the post-pandemic phase. Abagna et al. (2025, this issue) with their work on "An Integrative Review of the Pillars for Planning Progressive Post-Pandemic Cities" took up the challenge to envision what this means for our cities, based on an integrative review of the urban studies literature. The pandemic experience may have reshaped the way cities are conceptualized and organized. Especially the isolation and differences in vulnerabilities and social capital became apparent across a range of societal groups. In their post-pandemic city framework, the authors highlight that five crucial pillars are required to respond to ongoing challenges in city planning: safe environments for all, accessible open spaces in neighborhoods, flexible public transit, accommodations for remote work, and resilient food systems. COVID has prompted calls for more flexible and inclusive urban planning. Similar to the aftermath of many crises and disasters, the post-COVID era underlines the importance of reducing inequities in urban environments and strengthening public institutions' role in co-creating urban policies with local communities. The authors point toward a more community-centered and equitable vision of urban resilience.

Taken together, these articles paint a complex and evolving picture of crisis management and recovery challenges in the wake of COVID-19. The pandemic highlighted the importance of decentralized capacity and autonomy in crisis response, underscoring that local governments and communities are often best positioned to respond quickly and effectively to evolving threats. At the same time, the political context of crisis management matters: trust in government, political culture, and governance structures all shaped both the perception and efficacy of pandemic responses. While previous collaborative structures and governance frameworks provided a foundation for collective action, they also constrained innovation and adaptation in some cases. Moving forward, strengthening institutional flexibility and fostering adaptive governance will be critical for building resilience to future crises. Especially noteworthy are community-based responses, grounded in social learning and prior disaster experience, which emerged as vital complements to government-led efforts, particularly for vulnerable populations.

So, what have we learned and forgotten? As COVID-19 morphed from a health to an economic and solidarity crisis, many (governmental or independent) evaluations and academic studies highlighted the need for more integrated approaches that address both health and economic vulnerabilities simultaneously. This is easier said than done. We need to be realistic, as a range of crisis dynamics obstruct such an integrated approach.

For one, the pandemic blurred the traditional boundaries between creeping crises and sudden-onset events. While the virus—in hindsight—emerged gradually, its spread and the prompted policy responses (such as lockdowns) created acute and immediate shocks. This nonlinear nature of the pandemic response challenges conventional disaster classification and response frameworks, prompting researchers to reconsider how we define and manage complex transboundary crises.

Second, to achieve a truly integrated response, trust in institutions emerged as a critical factor during the pandemic. When we needed an integrated approach and solidarity most, society became increasingly divided as a consequence of mis/disinformation and political polarization, which eroded trust and hampered response efforts after the second and third infection wave. For crisis and disaster researchers, this highlights the need to integrate political and social dimensions more explicitly into crisis governance frameworks, but we also must realize that there are societal forces that keep pulling apart any effort to achieve an integrated response. COVID-19 was, in many ways, also a crisis of disinformation, as much as it was a health and solidarity crisis. The rapid development of vaccines was a scientific triumph, but the rollout was marred by (social media led) misinformation and vaccine hesitancy. We still witness a profusion of activist and political statements on the safety of vaccinations as of today. To achieve an evidence-based and truly integrated response to pandemics is increasingly difficult now in many countries with a populist political reality.

Yet an integrated, whole of society approach to safety as well as security (the classic orientation of the approach) is one of the key challenges also for future pandemic preparedness, as the response requires intense cooperation between all governance levels, the private sector, and nongovernmental actors. COVID-19 laid bare not only crucial interdependencies but also deep-rooted social inequities. Vulnerable communities, marginalized racial and ethnic groups, low-income populations, and frontline workers faced disproportionate health and economic impacts. These disparities were not accidental; they reflected structural weaknesses and historic injustices that have long shaped vulnerability that we know very well from the disaster literature. In the wake of COVID-19, we might easily forget how disproportionally severe elderly homes were hit, or how specific low-income groups lacked the opportunity to work from home, or how some ethnic minorities lacked the social and economic capital to make use of protective measures and health care systems.

Both in academic research and in political reality, we see a real challenge to learn and prepare for the next pandemic. As we begin to harvest the initial set of long-term lessons 5 years after COVID-19, we already risk forgetting some of the pandemic's most crucial insights. Previous experience matters, as we witnessed countries that harnessed lessons from SARS or MERS were better equipped to respond to the initial stages of the pandemic. Yet, in many countries investment in pandemic preparedness is lagging behind, or is already withdrawn. Also, the long-term effects of lockdowns and quarantine should be explicitly weighted by multi-disciplinary and diverse crisis teams. While the urgency of the health crisis at hand will likely again be dominant, it is vital to already account for possible secondary crises, in terms of impacts on mental health, deprivation of education, and societal inequalities.

Indeed, it seems that integrated approaches are difficult to organize because of the intricacies of coordination in crisis preparedness and response (Boin and Bynander 2015). They are also difficult to study and test because of their obfuscation of cause and effect. COVID-19 showed us we cannot afford a lack of integration and social cohesion when whole of society is at stake. Yet, it is precisely this integration in politics and policy that is missing, making us vulnerability for the next pandemic. Finally, and seemingly crucial in this time of disinformation and budget cuts, we must not forget that it was the sciences (both medical and social) that got us out of the pandemic. What eventually saved us was the rapid and innovative development of COVID-19 vaccinations and adoption thereof.

It is not the question whether we will witness a new pandemic, it is the question how soon we find ourselves again in this situation. Therefore, it is crucial to assemble and share critical lessons about pandemic crisis management now, as we pass the 5-year mark. Especially now, when attention fades, we must keep on insisting to really *learn* and *implement* them.

References

Abagna, G. A., R. Ayambire, I. Quaye, C. Itbo, and B. Addi. 2025. "An Integrative Review of the Pillars for Planning Progressive Post-Pandemic Cities'." *Risks, Hazards, & Crisis in Public Policy* 16, no. 2.

Aruta, J. J. B. R., K. A. Crisostomo, N. F. Canlas, J. U. Almazan, and G. Peñaranda. 2022. "Measurement and Community Antecedents of Positive Mental Health Among the Survivors of Typhoons Vamco and Goni During the COVID-19 Crisis in the Philippines." *International Journal of Disaster Risk Reduction* 72, no. 102853: 102853.

Boin, A., and F. Bynander. 2015. "Explaining Success and Failure in Crisis Coordination'." *Geografiska Annaler: Series A, Physical Geography* 97, no. 1: 123–135.

Canwat, V. 2025. "'Food Security Effects of Covid-19 Lockdown: Causal Pathways and Vulnerability'." *Risks, Hazards, & Crisis in Public Policy* 16, no. 2.

Chatterjee, V., and T. Arapis. 2025. "Crisis Communication During COVID-19: Insights From Pennsylvania and Florida Local Governments." *Risks, Hazards, & Crisis in Public Policy* 16, no. 2: 12291. https://doi.org/10.1002/rhc3.12291.

Diko, S. K., S. A. Okyere, L. K. Frimpong, S. L. Mensah, M. Abunyewah, and G. Amankwaa. 2025. "A Tale of Two Disasters: Unpacking How Social Learning From the Ebola Epidemic Shaped COVID-19 Response in Informal Settlements in Freetown." *Risks, Hazards, & Crisis in Public Policy* 16, no. 2: 12319. https://doi.org/10.1002/rhc3.12319.

Feitelson, E., P. Plaut, E. Salzberger, et al. 2022. "'Learning From Others' Disasters? A Comparative Study of SARS/MERS and COVID-19 Responses in Five Polities'." *International Journal of Disaster Risk Reduction* 74, no. 102913: 102913.

Fenxia, Z. 2022. "The Community Resilience Measurement Throughout the COVID-19 Pandemic and Beyond—An Empirical Study Based on Data From Shanghai, Wuhan and Chengdu." *International Journal of Disaster Risk Reduction* 67, no. 102664: 102664.

Hildebrand, S., and M. Malone. 2025. "'Representative Bureaucracy and COVID-19 Among Local Emergency Response Professionals'." *Risks, Hazards, & Crisis in Public Policy* 16, no. 2: 12293. https://doi.org/10.1002/rhc3.12293.

Kaim, A., and I. Kubbe. 2025. "Who Is the Master of Disasters? A Comparative Analysis of COVID-19 Crisis Response and Resilience in Democracies, Hybrid Regimes and Authoritarian States'." *Risks, Hazards, & Crisis in Public Policy* 16, no. 1: 1–14.

Klauser, F., and D. Pauschinger. 2022. "Searching for the Right Balance Between Openness and Closure: Spatial Logics of Crisis Management and Control in the Policy Response to Pandemic Disease Such as COVID-19." *Journal of Contingencies and Crisis Management* 30, no. 1: 32–40.

Kuipers, S., A. van der Wilt, and J. Wolbers. 2022. "Pandemic Publishing: A Bibliometric Review of COVID-19 Research in the Crisis and Disaster Literature'." *Risk, Hazards & Crisis in Public Policy* 13, no. 4: 302–321.

McOmber, C., and C. J. Kirchhoff. 2025. "State 'Pandemic Pods': US Regional Coalitions and Their Responses to the COVID-19 Pandemic." *Risks, Hazards, & Crisis in Public Policy* 16, no. 2: 12323. https://doi.org/10.1002/rhc3.12323.

Reyes Bernard, N., A. Basit, E. Sofija, et al. 2021. "Analysis of Crisis Communication by the Prime Minister of Australia During the COVID-19 Pandemic." *International Journal of Disaster Risk Reduction* 62, no. 102375: 102375.

Silver, A., N. Koyratty, S. Penta, and L. Clay. 2025. "The Influence of Environmental Cues on Behavioral Response: An Assessment of the Protective Action Decision Model in the Context of COVID-19'." *Risks, Hazards, & Crisis in Public Policy* 16, no. 2: 12305. https://doi.org/10.1002/rhc3.12305.

Thomas, J., and J. P. Terry. 2022. "'Containing COVID-19 Risk in the UAE: Mass Quarantine, Mental Health, and Implications for Crisis Management'." *Risk, Hazards & Crisis in Public Policy* 13, no. 1: 9–27.

Wang, H., and L. Xiong. 2022. "Understanding the Antecedents of Mobile Social Media Acceptance During the Public Health Crisis Maintenance Stage." *International Journal of Disaster Risk Reduction* 74, no. 102925: 102925.

Zaychik, D., I. Beeri, Y. Rein-Sapir, N. Avni, and A. Altshuler. 2025. "Innovation and Adaption in Local Governments in the Face of COVID-19: Determinants of Effective Crisis Management." *Risks, Hazards, & Crisis in Public Policy* 16, no. 2: 12311. https://doi.org/10.1002/rhc3.12311.

Zhao, X., and S. J. Tsang. 2022. "Self-Protection by Fact-Checking: How Pandemic Information Seeking and Verifying Affect Preventive Behaviours." *Journal of Contingencies and Crisis Management* 30, no. 2: 171–184.