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Understanding the experiences of public experts on COVID-19 in Australia

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Public experts emerged as vital media figures during the COVID-19 pandemic, influencing political discourse and health interventions. Our study, based on qualitative interviews with public experts who engaged with Australian media, sought to understand their unique experiences and motivations in a pandemic context. Despite significant negative repercussions such as receiving abuse from the public and dealing with difficult journalists, public experts reported positive experiences, such as having a translatable public health impact, reducing community anxiety, and making research accessible outside of academic environments. This study shows the importance of gaining a deeper understanding of these essential contributors to science communication, particularly in the context of post-normal science during a crisis.

KEYWORDS

public experts, science communication, COVID-19, medialisation of science, public health

Background

The first confirmed case of COVID-19 in Australia was announced by the Australian Government on the 25th January 2020 (Australian Government, 2020). By the end of March 2020, Australia had implemented social distancing rules, stay at home orders and placed limitations on the functioning of non-essential services (Knaus et al., 2020). Many governments, including Australia's, designed policies in the initial stages of the pandemic to balance the health of individuals, healthcare systems and providers, and the economy, while also considering the impact on people's livelihoods.

These challenging policy decisions were occurring at a time of heightened fear, anxiety, and division in the community. The primary source of information for populations about COVID-19, including pandemic-related policy and public health restrictions, was news media (Nolan et al., 2021). In Australia, especially during periods of lockdown, public messaging delivered via daily state and national televised press conferences was considered both an important and trustworthy source of information (Lupton and Lewis, 2021). Press conferences had a significant impact on public health measures by setting the media's agenda and shaping individuals' responses (Fitch, 2021). Australia's media landscape is diverse, featuring a mix of publicly funded outlets, including the Australian Broadcasting Corporation (ABC) and Special Broadcasting Service (SBS), alongside private media corporations, such as News Corp and Nine Entertainment Co. These press conferences elevated politicians and health officials to visible leadership positions (Fitch, 2021). In the early days of the pandemic, news consumption increased as a result of people having more time available (due to working from home or not being able to work) and a personal interest in understanding the spread, risks and prevention measures for COVID-19 (Nelson and Lewis, 2022).

One crucial aspect of the media's role in the COVID-19 pandemic was to continue to shape society's attitudes, beliefs, and behaviors about science (Pearman et al., 2021). Despite

the important role that the media plays in the dissemination of scientific information, challenges can arise when communicating science to the public. Inevitably, information adaptation is required to communicate scientific research via the socially constructed environment of news media (O'Connor and Joffe, 2014). For example, a significant proportion of public health science that informed the government's pandemic-related decisions was from positivist 'natural scientific' fields such as epidemiology which formulates, tests and adjusts hypotheses (Pearce, 1996). The media's role therefore, is to interpret and adapt the outputs of epidemiological science into a story that will resonate with the informalities of peoples' lives (Boykoff, 2011).

In contrast to scientists who work within the boundaries of positivist paradigms, social scientists tend to consider media to be socially constructed and neither exclusively objective nor factual (Yan, 2020). 'Socially constructed' refers to the concept that aspects of experience, such as beliefs, values and identities, are shaped by social and cultural factors rather than being inherent or objective (Luckmann and Berger, 1966). Furthermore, scholars who hold a social constructivist perspective, contend that the nature of knowledge is fundamentally subjective and that the processes by which knowledge is generated are shaped by social factors (Chakravartty, 2017). Social science scholars believe that, despite the 'caricature' of natural science being purely systematic and unbiased, science has components of unavoidable subjectivity (Knorr-Cetina, 1983; Kuhn, 1962). This suggests that scientific knowledge is not a fixed or objective truth but a product of social and cultural contexts. The social construction of knowledge asserts that traditional notions of scientific objectivity are insufficient, and a more nuanced understanding that incorporates subjective elements and societal values becomes crucial for communicating and decision-making.

Beyond accepting that science is unavoidably subjective, post-normal science occurs where "facts are uncertain, values in dispute, stakes high and decisions urgent" (Funtowicz and Ravetz, 1993, p. 744) and where technical input is not sufficient to address scientific issues without consideration given to the ethical, social and legal factors (Brossard et al., 2019). This differs from normal science, where the assessments of risks and benefits can mostly be established through purely scientific contributions (Brossard et al., 2019). Furthermore, the extent to which a field of study aligns with the characteristics of post-normal science can be influenced by the political climate and the level of controversy surrounding the scientific issues at hand (Nicolaisen, 2022). This means that post-normal science requires a more participatory, democratic, and reflexive approach to scientific inquiry, decision-making and expertise in the face of complex and uncertain societal challenges (Rainey et al., 2021). Post-normal science was particularly relevant during the COVID-19 pandemic where the fast pace of science resulted in a significant amount of ambiguity. This presented a considerable challenge for scientists when trying to communicate and incorporate this uncertainty into their guidance (Abdool Karim, 2022). For example, experts were tasked with adapting complex scientific concepts into accessible information for the wider public through the media (Lavazza and Farina, 2020).

In relation to experts who provided commentary during the pandemic, there is an important distinction to make between experts and public experts. Experts are responsible for generating new knowledge within their field whereas public experts are responsible for applying their knowledge to the explanation and solution of societal problems (Peters, 2021). Furthermore, public experts played a significant role in the COVID-19 pandemic as they were not simply talking about their own area of expertise but were commenting on the broader issues of COVID-19 for society. Public experts quickly earned societal recognition for their active involvement in responding to the COVID-19 pandemic, with politicians frequently citing their advice when implementing and justifying specific public health measures (Lavazza and Farina, 2020). At the same time, the media played a crucial role by giving these experts a platform to educate the public about COVID-19 and critically evaluate the various strategies devised to curb transmission (Lavazza and Farina, 2020).

Outside of crises, the motivations of experts to interact with the media are thought to be shaped by: the desire to disseminate scientific knowledge and increase public understanding of science, the wish to influence public policy and decision-making, the potential for professional recognition and career advancement, and personal interest in science communication (Besley and Nisbet, 2013; Besley et al., 2013; Davies, 2008). Within areas of post-normal science such as climate science, there are examples of experts motivated by wanting to make publicly funded research available to those who paid for it (Tøsse, 2013) and share with public audiences, discoveries that may have profound societal impacts (Sharman and Howarth, 2017). There is also evidence that motivations differ between and within academic disciplines depending on, for example, how politicized an expert's specific role might be (Salmon et al., 2017). Experts may face several barriers to media engagement, such as concerns about the accuracy and reliability of media reporting, fear of misrepresentation and a lack of time and resources (see, for example (Calice et al., 2022; Devonshire and Hathway, 2014)). In relation to the pandemic, motivations of scientists to engage with the media has, at least in part, been characterized by wanting to provide 'correct information' to the public (Nölleke et al., 2023). This is particularly challenging and paradoxical within a field of post-normal science where knowledge was constantly changing (Abdool Karim, 2022).

The motivations driving scientists to engage with the media are part of the complex relationship between science and the media referred to as medialisation. The definition of medialisaton has changed over time. First described by Weingart in 1988, medialisation was characterized as the coupling of science and the media and how the scientific community and its research priorities were increasingly influenced by the need to gain media coverage and public attention (Weingart, 1998). Building on this idea, Weingart described how science began to prioritize media appeal over traditional scientific standards, potentially compromising the integrity of scientific research (Weingart et al., 2012). Weingart postulated that this trend was driven by a growing demand for science to be transparent and accountable to the public, as endorsed by policymakers and to a certain extent 'democratized'. This demand for public involvement and validation of science via media has also influenced the evaluation and governance of scientific institutions (Weingart, 2012). More recently, Weingart expanded medialisation to include governments' increasing encouragement of scientists to engage with the public in addition to universities driving their media offices to facilitate more media coverage (Weingart, 2022). Additionally, platforms such as ResearchGate are playing a significant role in shaping how academic work is disseminated and consumed by creating an environment that prioritizes gaining attention (Weingart, 2022). The medialisation of

science is thought to stem from the medialisation of politics whereby the importance of science is highlighted in influencing policy decisions (Peters et al., 2008). Furthermore, medialisation is particularly pertinent in the context of post-normal science (Brüggemann et al., 2020). In contexts involving post-normal science, the media plays a pivotal role by acting as a bridge between scientific experts and the broader public, adapting complex, evolving scientific knowledge into accessible information. For example, climate science is an example of a post-normal scientific field that is frequently examined in relation to medialisation (Ivanova et al., 2013; Tøsse, 2013). However, the COVID-19 pandemic now provides a new opportunity to analyze the medialisation of post-normal science. Like climate scientists, COVID-19 public experts have found their work thrust into the limelight, albeit under different circumstances.

To date, most research on COVID-19 public experts has centered on the repercussions to their public roles. Investigations by *Science* and *Nature* explored the experiences of experts interacting with the media. A survey by *Science* with 9,585 COVID-19 researchers found that 38% of the 510 respondents faced harassment, ranging from insults to death threats through various channels, affecting their professional and personal well-being (O'Grady, 2022). *Nature's* survey of 321 researchers revealed that over 25% encountered harassment from internet trolls or personal attacks post-media appearances, with more than 40% suffering emotional or psychological stress (Nogrady, 2021). An Australian study reported that 62% of 50 researchers faced trolling, with 20% receiving death threats or violence threats after media discussions on COVID-19 (Australian Science Media Center, 2021).

Despite these adversities, studies indicate that such negative experiences have not dissuaded experts from media engagement during the pandemic. Research by Nölleke et al. (2023), who interviewed 24 COVID-19 experts in Austrian media, found a minimal link between harassment and reluctance for future media engagement. Furthermore, experts expressed a strong commitment to provide evidence-based information, driven by societal expectations and viewing the pandemic as an opportunity to enhance public appreciation of scientific endeavors (Nölleke et al., 2023). In contradiction to these findings, some experts in Australia, when interviewed by The Conversation, spoke about their experiences of racist and misogynistic harassment and how they have since avoided engaging with media due to these negative experiences (Petterson and Beaumont, 2021). Similarly, in relation to climate science, Global Witness undertook a survey of 468 climate scientists and found that among the group of scientists who engaged with media at least once a month, 28% said they experienced 'a fair amount' or a 'great deal' of online abuse (Global Witness, 2023).

De Jong et al. (2024) further expanded on these dynamics by analyzing the unique challenges in science-media interactions during the COVID-19 pandemic. Their study highlighted the complex balance between the societal need for timely information and the risks of misinformation. Researchers and journalists faced heightened pressure to collaborate frequently, as public trust in science was at stake. Although this collaboration helped manage the flow of scientific knowledge, it also increased journalists' reliance on a limited number of experts, raising concerns about critical coverage and independent journalism during the pandemic (de Jong et al., 2024).

There has been limited published research using in-depth qualitative interviews to understand the experiences of public experts who have communicated in media about science in general. Furthermore, there has been limited qualitative research with public experts in times of crisis. We hypothesized that there would be unique aspects to the experience of public experts interacting with the media during a public health crisis and that understanding the impact of the experiences would be valuable for future crises or fields within post-normal science. This research sought to answer one overarching question: How did the COVID-19 pandemic impact public experts' experience with the media in Australia?

Methods

Design and setting

This study used qualitative semi structured interviews to investigate public expert's motivations, experiences, and impacts of engaging with media about COVID-19. The interviews were undertaken between February and May 2021. During this period, COVID-19 featured heavily in the Australian news media with key topics including: COVID-19 outbreaks, the vaccination rollout and ongoing public health restrictions (including travel restrictions between states, territories and overseas). At this time, new case numbers were small (between 1 and 44 per day), and the Australian Government was employing a 'COVID-zero' approach whereby outbreaks in some states resulted in strict and prolonged lockdowns. When writing this manuscript, Australia has seen several 'waves' of COVID-19 infections, with over 11 million cases and 24,000 deaths recorded (Worldometers, 2024).

Recruitment

Ethics approval was received from the University of Melbourne Human Research Ethics Committee (ID number 2020–20491–13,001-3). We invited potential participants to participate via email. In line with our earlier definition of a 'public expert', we identified participants as being a 'public expert' if they were featured in news media (television, print, radio, online) talking about not just their own research, but applying their knowledge to address and resolve societal issues. We did not establish a precise criterion for the extent of media engagement required for individuals to qualify for participation in this study. We recruited 'high profile' public experts, and we considered public experts to be 'high profile' if they contributed at least weekly to multiple forms of media. We purposefully recruited participants to achieve a diversity of experts who worked at a range of organizations such as universities, research institutes and government and who came from various natural and social scientific disciplines. The recruitment criteria were as follows: 'you are a public health expert (e.g., researcher, medical doctor, public servant) who has communicated to the Australian public via media about COVID-19'. As part of the recruitment process, we provided a link to an online participant information sheet and consent form. Once a participant had completed the online consent form, we contacted the participant to organize a time for their interview.

Data collection

GD developed an interview protocol, which was piloted tested and refined with LK and GS. The key themes covered in the interview

included: expert background and media experience, media as part of expert's role, motivations for media engagement, limitations in media engagement, missing experts in media and limitations on experts speaking in media. GD conducted all interviews via Zoom. They ranged from 37 to 75 min in length, with most lasting 60 min. Each interview was audio recorded and transcribed verbatim using a professional transcriber, checked against the audio recording, and imported into NVivo for analysis.

Analysis

After reading and re-reading the transcripts, GD developed an inductive coding framework in collaboration with LK and GS. Inductive codes and themes come from the data itself, rather than being predetermined by the researchers (Braun and Clarke, 2021). Once we agreed on a final coding framework, GD coded the transcripts in consultation with LK and GS who reviewed a portion of the coded transcripts to ensure a shared understanding of the data. The data were then coded into sub-themes in line with the principles of thematic analysis (Braun and Clarke, 2006). Within qualitative data analysis, thematic analysis is the method of identifying, analyzing and interpreting patterns of meaning (Braun and Clarke, 2006). More specifically, we used a reflexive thematic analysis which requires an insightful and nuanced interpretation of the data (Braun and Clarke, 2021). Once it was decided which quotes would be included in the results to represent each of the themes, these excerpts were sent to participants to ensure that they were satisfied with how they had been represented. Several participants requested this specific method of 'participant validation' in addition to reviewing their entire transcripts. This was likely due to the highly visible and politicised nature of their roles at the time. Of note, is that participants only agreed to have their specific quotes available rather than having their entire transcripts provided as a Supplementary Dataset. The themes identified included: professional expectations of media engagement, motivations for media engagement, who gets to be a public expert and the experiences of, and reflections about, being a public expert.

Participant demographics

Twenty-one participants completed an interview. A total of 36 people were contacted by email, 9 declined to participate due to time constraints and 6 did not respond. Participants had between 11 and 45 years of experience working in their field with a mean of 24 years. There were 11 female and 10 male participants. All participants had experience communicating in the media prior to the COVID-19 pandemic but had an increase in their media engagements due to the COVID-19 pandemic. Three participants reported their primary role to be a government official and 18 participants reported their primary role to be non-government (such as a medical practitioner or researcher). Of those whose primary role was non-government, 10 participants had an official secondary role with government that was directly related to the COVID-19 pandemic and the need for additional expertise to guide political decision making at the time. See Table 1.

TABLE 1 Participants.

Gender	
Male	10
Female	11
Type of primary professional role	
Government only (including health official)	3
Non-government (including researcher/ medical practitioner) and no secondary role in government	8
Non-government (including researcher/ medical practitioner) with a secondary role in government	10
Years of experience	
11–15	5
16–20	4
21–25	5
26–30	3
31–45	4

Results

Participants described a range of motivations, experiences, and impacts regarding their engagement with the media. Four main themes were identified from the interviews: professional expectations of media engagement, motivations for media engagement, who gets to be a public expert and the experiences of, and reflections about, being a public expert.

Theme 1 – professional expectations of media engagement

For all participants, engaging with media about COVID-19 was described as either a core obligation or a natural extension of their professional role. As such, many participants spent considerable amounts of time engaging with media as part of, or on top of, their day-to-day work. This time commitment applied both to those participants who had limited choice over their media engagements and for those who had more autonomy.

For participants who had a government role, engaging with media about COVID-19 was an essential component of their professional position. At times, they engaged with media numerous times per day. This meant that participants who had a role in government had a significant public-facing responsibility as well as a heavy workload.

> Participant 9: "*…there were multiple radio interviews each day… And, routine stand-up for tv appearances or press conferences. Especially in the early phase [of the pandemic] when every new case was really newsworthy. So whenever there was a newly notified case [my colleague] and I would stand up [for a press conference]….*"

A participant who had a role in government explained that there was 'no choice' about what media engagements they participated in, meaning they were expected to communicate in media without question. Additionally, they said there was 'little negotiation' about which individual would speak and what they would talk about,

emphasizing the inflexibility of media commitments. This highlights that government public experts had little control over their media engagements including the content of what they said.

> Participant 18: *"No choice, we were told when we needed to do that and there was a little negotiation sometimes between us and the Minister's office about who would stand up and what we would be talking [about]."*

For some participants who did not have a role in government, engaging with media was described as a natural extension of their professional role. For example, one participant noted that their employer expected them to engage with the media due to their specialized knowledge in a field relevant to COVID-19. This indicates that for some non-government public experts, there was not complete autonomy over whether they engaged with the media.

> Participant 2: *"So I guess I did not choose to reach out to the media it was more that there was an expectation of people with particular infectious diseases and epidemiological expertise within [organisation] to be available to talk to the media when they had enquiries."*

Distinctly different were participants who did not have a role with the government and were not expected to engage with the media as part of their professional duties. Despite this, they still frequently served as public experts in media due to the relevance of COVID-19 content to their profession. These participants spoke of needing to be strategic in their engagements to ensure they could maintain their regular work schedule. This highlights the amount of time that public experts invested in media engagements (despite it not being an expectation of their professional role) and the need for them to prioritize the type and timing of media engagements, given that their regular work continued. For example, interviews that got compressed into small segments for television news consumed a lot of participants time and the output was 15–20 s which participants did not find worth the disruption.

> Participant 10: *"…so I'm trying to be a little bit more strategic and selective [with] who I speak to now. Mainly because I do not have much time, I really do need to focus on my normal work…."*

> Participant 6: *"I do not agree to requests that are pre-filmed spots on the evening news, because they just get edited down to 15–20 s, and all those crews come out to my flat and film me here so it's quite a disruption, my dog gets very excited and sometimes I have to go to a nearby park or out in the street, and sometimes it's in my home… they'll be there for an hour for this tiny little sound bite that really no one's going to notice and …so I do not think I'll accept of those anymore."*

In summary, public experts who had a role in government and for whom media engagements were a core expectation of their role, described having little autonomy over the frequency, type, and content of their media engagements. Non-government public experts had more autonomy over their media engagements. However, for non-government experts, some were still expected to engage with media as part of their role whereas others could decide whether they would engage with the media or not. In certain circumstances, participants described having limited control over the final media content, as their contributions were significantly edited. For both government and non-government public experts, media engagements took up a considerable amount of their time, but it was only the non-government experts who were able to pull back from media engagements to re-focus on their day-to-day work.

Theme 2 – motivations for media engagement

Public experts whose primary role was non-government and who had autonomy over their media engagements, described a range of motivations for engaging with the media. In general, participants saw themselves as wanting to assist the public in understanding COVID-19. However, some participants discussed a more nuanced motivation such as ensuring that science was available to the public and not held exclusively by researchers. Public experts who were government officials did not describe explicit motivations to engage with the media as it was a core component of their job regardless of the pandemic.

One participant spoke about there being public experts who focused on technical aspect of the pandemic. They contrasted this kind of expertise to their own, which was on the implications of the COVID-19 environment (at the time) and what this meant for people in their everyday lives. They made specific reference to being able to give public audiences an informed prediction of the future (which was particularly pertinent during extended lockdowns).

> Participant 15: *"…I seemed to fill a void for people in terms of not being so focussed on technical details, but more focussed on implications and impact, understanding the reasoning behind it… often the public is not looking for the most expert voice, what they are looking for is a voice that can accurately and appropriately communicate, and allow them to better understand what's going on, and to give an informed prediction of the future…"*

Some participants were driven by more complex motivations such as their personal values about what scientists owe to the community. These participants saw scientists as being responsible for not only producing the science and publishing it in academic settings, but also for getting science out into the community. This highlights that some public experts believe in science being a public good rather than something that is only for academics.

> Participant 12: *"that commitment to being a public intellectual, public sociologist as they call it in sociology which is a bit more specific… just a public researcher … I do have a strong belief that we should not just write only for other academics."*

> Participant 17: "*I hate the idea that all the effort to do research that's aiming to help is not actually used when it's needed most. So, I take any opportunity I can to share the knowledge that is in the field, whether it be from what I've done or what my students and post-docs have done, or what others have done."*

Other participants felt they could have a positive impact on community sentiment about COVID-19. One participant cited their motivation to speak in media was to reduce panic and fear. Some

participants were motivated by trying to elicit a specific and less negative reaction from the community rather than to communicate about a defined topic within COVID-19.

> Participant 16: "*…I think there's a lot of fear and panic out there, that I think is out of proportion to the risk. And so, what I've mainly been trying to do, is hopefully factually putting it as it is, trying to calm down the panic and fear … I think the fear and panic can sometimes be out of proportion to the risk at the time. You know and trying to foster discussions rather than absolutism.*"

Several participants were motivated to engage with media to comment on aspects of expert discourse that they did not agree with. For example, one participant cited that their motivation was to offer a different or opposing view to other experts. This points again to a more nuanced motivation than just communicating the science well, but to actively mitigate the impact of other public experts.

> Participant 20: "*At various times with the various issues that have occurred, you know there have been some, just very extreme interpretations of what's going on and I think someone said something or a few people said things and I did not quite agree. You know, I think I had been contacted by journalists and I sort of declined, and then eventually someone called me at the right time, and I thought oh I'd better say something about this.*"

In summary, participants described different motivations for engaging with the media. Some participants felt a responsibility to communicate COVID-19 related information to the public to increase understanding and shape the community's response to the pandemic. Some public experts described a professional obligation to participate in regular media to ensure their research and academic work in general was available outside of academic spheres. Other participants described wanting to correct misinformation or views that they disagreed with.

Theme 3 – who gets to be a public expert

Many participants felt that the most appropriate experts were not always the ones speaking in the media. Some participants thought medical practitioners and natural scientists were prioritized over social scientists. Others thought that some specialist medical practitioners were prioritized over public health experts who may have had more appropriate expertise. As an example, one participant noted that different types of medical practitioners were given a platform in media, such as infectious disease physicians, but that these specialists may not be the most knowledgeable about specific issues related to public health policy. This underscores the participant's perception that public health extends beyond addressing individual patients to making decisions that affect entire populations.

> Participant 21: "*I think clinicians generally, many clinicians do not understand that complexity, and so they are given a voice here because they are infectious diseases clinicians. I do not mean to point the finger at them. We've had paediatricians, we have had psychiatrists, we have had surgeons, we have had all sorts of clinicians speak up. They're usually speaking up from a, for very good, very sound reasons. They want the best for the person sitting in front of them. But that's not how public health is decided.*"

An issue raised by some participants was that the media focused on interviewing experts who had specific knowledge of natural scientific topics like virology or infectious diseases. At times, these experts would be asked a question about a social aspect of the pandemic. Instead of the media having a diversity of experts who could speak to a range of issues including the social impacts of the pandemic, a natural scientific public expert without relevant experience would be asked to speak to an issue outside their expertise.

> Participant 15: "*So certainly I think people talking about the social impact, [for example] the impact on domestic violence. Those kinds of things. They often become questions that get asked to these experts that have no expertise in the area.*"

Following this, one participant said that he thought the public wanted the pandemic explained in natural scientific terms rather than social scientific terms. The participant noted the enigma of how the social factors of the pandemic are responsible for the spread of the virus but that the commentary was focused on the natural scientific elements of the pandemic. This paradox highlights the perception that there are fewer social scientific public health experts speaking about the pandemic in the media. It is unclear if this imbalance is due to the public's desire for the pandemic to be explained in natural scientific terms, or whether social scientific expertise is undervalued by the media.

> Participant 8: "*I think that people want the pandemic explained in biological terms rather than social terms, which is a paradox – so there's never been a pandemic in history where the social factors have not been more important than the biological factors. The organism is the least of it, the social factors are what allows the pandemic to spread, and I use social in the broad, social/political/economic/environmental – wrap that all up, those are the factors that create a pandemic, as much, if not more than the biology.*"

As natural scientific over the social scientific expertise was prioritized, either because the public was more interested in the natural scientific aspects or because media did not prioritize social science expertise, some participants noted the 'too quiet' social science public health expertise. Public experts were aware that social science experts were not prominent enough in media.

> Participant 3: "*so epidemics, like the way things panned out, and this is important, is that, a lot of quantitative epidemiology and people like me [from a natural scientific field] and people who know things like me, talking about strategy and policies and things like that, the voice that was missing or it's not missing, but it's always been too quiet, is the social science public health side of things.*"

From another perspective, some participants reflected on instances where medical practitioners working in the healthcare system could not speak in the media. One participant referred to a situation where they used their existing media platform to advocate on behalf of medical practitioners about their lack of access to personal protective equipment such as N95 masks. This participant said that medical practitioners without adequate access to personal protective equipment were gagged as their hospital employer did not want this information widely known. This demonstrates that some medical practitioners, such as this participant, had access to media and others did not.

> *Participant 15: "one of the reasons that I felt the need to really press the whole issue of the N95s was because people working in hospitals were actually muzzled, they were not allowed to talk to the media about their experiences, and what was happening, because the hospitals did not want it out there."*

Another missing voice identified by participants was those who had a lived experience of COVID-19. Interestingly, participants did not refer to people with lived experience of COVID-19 as an expert perspective although they did recognize it as being an important perspective.

> Participant 8: *"I think the voice of the person who's had COVID-19 is probably missing. It's tended to be very expert dominated has probably been my main reflection."*

In summary, participants reported instances where certain types of experts were given priority in the media over others. For example, where media may have prioritized natural scientists over social scientists and individuals with lived experience of COVID-19. Furthermore, our participants reported that high profile medical practitioners had easy access to the media, even if they were not the most appropriate experts to speak to a specific topic. Conversely, participants reported that medical practitioners with relevant front-line experience may not have had easy access to the media, especially if their employer did not want them engaging with the media.

Theme 4 – experiences of, and reflections about, being a public expert

Both for participants who had a role with government and for those who did not, participants described similar positive and negative experiences of being a public expert on COVID-19. Many participants described a sense of gratification for having a genuine impact on public health through their media engagement. For researchers, while they may have been involved in public health research for many years, they had not previously had a tangible impact on public health and noted it as a rare experience in the life of a researcher.

> Participant 20: *"I gave up things to become a public health academic to make a difference in the real world, and I feel like I've probably made more difference in the real world in the last year or so than certainly the 5 years before that."*

> Participant 4: "*… to be pulled into the key committees and be able to understand the emerging questions and to iteratively feed back to the politicians and the decision makers how that's going, and then to be able to explain that to the public – I mean I think very, I do not think many academics have that opportunity to really have that deep understanding of translation on so many levels. And I think that's been an amazing privilege and it's helped me understand a lot more about how what I do can be useful or not useful, and to further refine our skills in doing it…."*

> *Participant 19: I think it's an incredibly privileged role to be in, so I feel quite privileged to be in a role like this at a time like this in our nation's history and it's incredibly important to be able to explain to the people of Australia what's going on, to be honest and open in letting people know what's actually happening…."*

Conversely, participants described the challenges of being a public expert and made specific reference to situations when they had been caught in a disagreement with other experts. Participants spoke about the challenges of trying not to publicly disagree with other experts because they did not want the media to focus on the disagreement rather than the content of what they were saying.

> Participant 5: *"particularly in academia, academics have disagreements with each other, and that's part of our culture. And that's part of the culture of, you know, generating new knowledge and having open exchange and being critical, and that's an important part of what we do. I do think within a public health response it's very important though to be mindful as academics of how that debate might be perceived by the public, and potentially undermine confidence."*

Participants described being threatened and abused because of something they had said in the media. Some participants also spoke about how they structured what they said to avoid harassment. One participant said that to avoid receiving hate mail, she was 'vanilla' with their comments. The conversation concerning abuse and hate mail underscored the profound impact on public experts, who must demonstrate resilience due to the potentially distressing nature of these messages. This underlines the inevitable fact that their statements might provoke disagreement among some people.

> Participant 4: *"you'd get people threatening you and abusing you particularly around masks or something like that, so that's really upsetting…."*

> Participant 17: "*I have become too reasonable, like I have become very, I have tried to be very safe in what I say, because I just hate – like I am not thick skinned at all, and I get so affected by hate mail, that I just have to keep myself safe. And that sometimes means being a bit vanilla with my comments."*

Other participants described the stress of working with challenging journalists who were impolite, hostile, and offensive.

> Participant 19: *"there are times when it's stressful, there are times when particular journalists can be quite challenging to communicate with, they can be rude, they can be aggressive, they can be insulting and so that's never pleasant but it's part of the role."*

However, other participants spoke about the positive experiences of working with journalists citing their desire to understand what they were covering and not quoting experts out of context.

> Participant 7: *"the journalists, and the journalists for the last 12 months have been amazing in Australia, they are you know mostly, mostly incredibly fact finding, they want to understand what they are writing about, …they do not quote you out of context."*

In summary, positive experiences of public experts included having a translatable public health impact that they may not have

otherwise had in their professional roles and engaging with journalists who accurately represented what they said and in an appropriate context. Public experts described the privilege of not only communicating information to the public but assisting government in decision making around public health interventions. Negative experiences included having to manage disagreement between experts in public forums and being threatened and abused by members of the public, interacting with difficult journalist, and needing to alter the content of what they said to avoid further harassment.

Discussion

Our study describes the experiences of public experts on COVID-19 who engaged extensively with media in Australia. The findings are consistent with existing research about some of the motivations for and negative consequences of being a public expert on COVID-19 (Nogrady, 2021; O'Grady, 2022). However, our findings provide additional contextual information, as participants were able to elaborate on their encounters across a broad range of topics. Participants spoke about: the professional expectations of being a public expert, the types of public experts who were given a platform by the media, what their motivations were to engage with the media and their experiences of, and reflections about their role.

Many participants described that engaging with media and acting as a public expert was an expectation of their professional role whether it was a core obligation or a natural extension of their existing work. Similarities and differences between the experiences of government employees who were expected to engage with the media, and non-government experts who chose to engage with the media, were novel observations. As part of being a COVID-19 public expert, participants described distressing incidents where the media focused on disagreements between experts rather than the content of what each expert had said. In response to experiencing abuse from the public, one participant used the phrase 'staying vanilla' with their comments to protect themselves without the required 'thick skin' to 'keep safe'. Additionally, it was not just members of the public who tried to upset experts. Some participants had difficult interactions with journalists who they described as 'rude, offensive, and insulting'. Other participants felt their experiences with journalists were largely positive and said journalists wanted to 'understand what they were writing about'. Public experts indicated that they felt they had made considerable translatable impacts on public health which were greater than their previous work as academics. Moreover, our results showed that there was an emphasis on natural scientific experts over social scientific experts and a desire for the pandemic to be explained in biological rather than social scientific terms. This parallels the challenges observed in public consultations, where diverse stakeholder engagement is crucial for informed decision-making but is often limited in practice (Dempster et al., 2019). Furthermore, public experts were driven by a desire to create a specific response in the community to reduce fear and to promote a shared understanding of science.

Reflecting on the considerable impacts public experts felt they had made on public health beyond their academic contributions, our findings revealed a preference for explanations grounded in natural rather than social sciences. As a participant stated "*there's never been a pandemic in history where the social factors have not been more important than the biological factors*" yet, social scientists and the social implications of the pandemic were perceived to be less of a priority for the media than those experts working within natural scientific fields. Perhaps this heavy reliance on science is unsurprising given Beck's theory around risk and society (Beck, 1992) and how society relies on science to explain and mitigate risk (Beck, 1992; Boudia and Jas, 2007). However, this means that the value that social scientists can provide was missing. These missing values included the broader social, behavioral, cultural, economic, and psychological aspects of the pandemic. Including social scientists in post-normal scientific media discourse is important as traditional scientific methods alone are insufficient to address the complexities and uncertainties involved in post-normal science (Brossard et al., 2019). Gibbons argues that a transition from traditionally reliable scientific knowledge to knowledge that is socially robust, allows for the inclusion of diverse stakeholder perspectives without undermining the foundations of scientific reliability (Gibbons, 1999). Scientific knowledge has always been limited and subject to change, but with the inclusion of wider societal input, the debate and validation of scientific findings extend beyond expert communities (Gibbons, 1999). This shift will force science to be more inclusive and reflective of broader societal contexts and concerns, even as it challenges traditional norms of scientific validation.

Science's contract with society is relevant in the context of our findings, not only that social scientists are not sufficiently involved in public discourse but that those with a lived-experience of COVID-19 were also missing. At the time of writing this paper, most people have had or know someone who has had COVID-19. However, at the time of data collection, this was not the case, and would have added important perspectives to public conversations. This approach aligns with the participatory governance mechanism driven by media, as identified by Peters (2011) which reflects and shapes the audience's expectations and values in the coverage of science. By indirectly involving the public in the governance of science, the media acts as a conduit for a more democratized science, ensuring that scientific discussions are not only grounded in natural scientific expertise but are also informed by the diverse experiences and insights of wider society (Peters, 2011).

The media's role in democratizing science by incorporating public perspectives into scientific governance resonates with the concept of medialisation. Medialisation seeks to explain the relationship between science and the media and has described a trend toward science becoming more transparent, accountable, and democratized. This has been influenced by public and policy demands, leading to enhanced governance and a push for greater public engagement and media presence in scientific discourse (Weingart, 2012, 2022). This builds on earlier descriptions of medialisation that focused on the more negative aspects of medialisation (Peters, 2011) such as oversimplification, sensationalism, and an increased pressure for scientists to produce newsworthy research (Weingart, 1998). Given that we found experts were driven to engage with the media to benefit society rather than their own research, we posit that the motivations of public experts in post-normal crisis settings may have been less affected by the historically negative aspects of medialisation, than in non-crisis and normal science settings. For example, the motivation to engage with media to elicit a specific fear reduction response in the community rather than to increase their public profile, research citations and funding. These intrinsic rather than extrinsic motivations have similarly been documented about climate science public experts (Entradas et al., 2019). Although public experts may have expressed

altruistic intrinsic motivations to engage with the media, it is within scientific norms to avoid self-promotion, so it is possible there were selfish motivations driving experts to engage with media, but this was not given voice. As Entradas and colleagues pointed out, the presence of social desirability bias, where people tend to give answers they believe are more socially acceptable, might impact the reported motivations of scientists (Entradas et al., 2019).

A further parallel can be draw with climate change which Getson and colleagues described as a 'wicked' problem (Getson et al., 2021) (that is, simply unsolvable just by knowing its scientific cause). A pandemic is a wicked problem because despite knowing the cause and the mechanism of transmission, societal dynamics mean its transmission is inevitable. We argue that in other post-normal scientific crises in the future, scientists hold a crucial, potentially decisive role in encouraging the implementation of strategies to mitigate and adapt to its effects. Furthermore, scientific institutions will play their own role in medialisation via embedded media offices and encouraging communication between scientists and media (Peters, 2011). Experts' motivations and expectations to engage with the media are likely intertwined with institutional media priorities. Additionally, a positive aspect of medialisation may be that it has helped to prepare scientists to serve as public experts during the COVID-19 crisis, ultimately benefiting society.

Strengths and limitations

The strength of this study lies in a unique amalgamation of factors: the COVID-19 pandemic, the media environment, and the involvement of public experts. Australia's attempt at maintaining a COVID-zero strategy for over a year, leading to extended lockdowns and social restrictions. These measures sparked considerable opposition among members of the public regarding specific restrictions. This discord was further amplified by Australia's polarized media landscape, where reporting on COVID-19 was often politically framed. However, the results of this study need to be interpreted in the context of several limitations. Firstly, the use of qualitative interviews provides rich data, but results may not be generalisable to all public experts who have engaged with media about the COVID-19 pandemic. Secondly, only public experts who had engaged with media in Australia were included in this study so the results may not be generalisable to public experts who engaged with media in other countries. Thirdly, those experts who chose to participate in this study may have different experiences to those who chose not to participate or who were not contacted by the researchers to participate. Finally, despite its high GDP *per capita* and leading position in numerous scientific fields relevant to COVID-19, Australia's relatively small population may limit the country's overall depth and breadth of public expertise compared with other high-income countries.

Conclusion

Communication from public experts via the media was critical in enhancing public understanding of the COVID-19 pandemic and in securing the public's cooperation with public health measures. A clear comprehension of how public experts have worked with the media during times of post-normal scientific crises is imperative. This understanding supports the vital work of science experts and fosters their intrinsic motivations to engage in public discourse. In the broader context of post-normal science, the role of public experts may be reimagined not only as mediators of scientific knowledge but also as vital links connecting science with society at large. Public experts are instrumental in advancing our approach to 'wicked' problems in post-normal science, challenges that cannot be resolved by scientific information alone, whether they concern increasing carbon emissions or highly infectious pathogens. Future research should investigate the evolving role of public experts in the media, especially in the context of future post-normal scientific crises.

Data availability statement

The datasets presented in this article are not readily available. As part of our ethics conditions, we are not able to share the interview transcripts. Requests to access the datasets should be directed to georgia.dempster@unimelb.edu.au.

Ethics statement

The studies involving humans were approved by University of Melbourne Human Research Ethics Committee. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

GD: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. GS: Conceptualization, Formal analysis, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fcomm.2024.1501469/full#supplementary-material

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