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What do experts mean by “misinformation” in the COVID-19 era? A critical scoping review protocol

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Abstract

In April 2020, the World Health Organization released the report *Managing the COVID-19 infodemic: A call to action*, declaring that “the 2020 pandemic of Coronavirus disease (COVID-19) [had] been accompanied by a massive ‘infodemic.’” Soon afterwards UN Secretary General Antonio Guterres tweeted - also alluding to COVID-19 - that “a tsunami of misinformation, scapegoating and scaremongering [had] been unleashed” also in relation to COVID-19. The tweet was followed by a March 2021 report from the *Centre for Health Security* at the Johns Hopkins Bloomberg School of Public Health, warning that “health-related misinformation and disinformation” were undermining the public response to COVID-19, and by a February 2022 US Department of Homeland Security infographic, *Disinformation Stops With You*, alerting about the dangers of “misinformation”, “disinformation”, and “malinformation” – dubbed MDM - distinguishing these terms based on the presumed intentionality of the agents producing or spreading them. However, there has been scant interrogation of expert meanings of MDM in the COVID-19 context and of the implications of the premises underlying these meanings for public policy, equity, and civil, social, and political rights. Drawing from the traditions of critical policy, discourse, and document analysis, we will apply Arksey O’Malley’s framework, enhanced by Levac et al.’s team-based approach, to conduct a critical scoping review of the medical and social scientific peer-reviewed literature, identifying, summarizing, and appraising expert meanings of MDM. We will also assess the implications of our findings for the health and well-being of populations affected by policies informed by dominant concepts of MDM.

Keywords: COVID-19; Misinformation/disinformation/malinformation/infodemics/fake news/conspiracy theories; Scoping reviews; Critical policy studies; Critical discourse analysis

1 Introduction

In 2022, the National Library of Medicine (NLM) listed the term “disinformation” as a Medical Subject Heading (MeSH), a “hierarchically organized vocabulary” produced by the library since 1963 and used to assist with health-related information [1]. The NLM, following the Merriam-Webster dictionary, defined “disinformation” as “false information deliberately and often covertly spread in order to influence public opinion or obscure the truth”, placing it under “propaganda”, and adding “fake news” as an alternative entry term [2]. That same year, the NLM, again following Webster, listed “infodemic” as a MeSH term, also under “propaganda”, defining it as a “rapid and far-reaching spread of both accurate and inaccurate information about something such as a disease” that hinders the learning of “essential information about an issue” [3].

While “disinformation” and “infodemic” were officially introduced in the medical lexicon as MeSH terms in 2022, the idea that certain types of information could potentially harm health was popularized on April 7 – 8, 2020, upon the release, by the World Health Organization (WHO), of the document *Managing the COVID-19 infodemic: A call to action*,

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declaring that “the 2020 pandemic of Coronavirus disease (COVID-19) [had] been accompanied by a massive ‘infodemic’” [4]. About a month later, on May 11, 2020, the “*United Nations Guidance Note on Addressing and Countering COVID-19 related Hate Speech*” would warn global audiences that “derogatory, misogynistic, racist, xenophobic, islamophobic or antisemitic language” were “closely linked [to] COVID-19 ‘disinformation’ or ‘misinformation’” [5]. On the 21st of that same month, United Nations (UN) Secretary General Antonio Guterres would tweet that “a tsunami of misinformation, scapegoating and scaremongering [had] been unleashed,” alluding to seemingly false or misleading information on medical/public health aspects of COVID-19 [6]. These reports and the tweet would trigger public debates around these concepts for months to come, indeed to this day.

A salient moment within these debates was August 21, 2021, when the US Food and Drug Administration (FDA) tweeted “You’re not a horse. You are not a cow. Seriously, y’all. Stop it”, warning anyone considering or already consuming the antiparasitic drug ivermectin to treat or prevent COVID-19 that the drug could be “dangerous and even lethal” if used outside of the scope of FDA guidelines [7]. A press release from the Office of the US Surgeon announcing its report on the topic, “*Confronting Health Misinformation: The U.S. Surgeon General’s Advisory on Building a Healthy Information Environment*”, had already warned that “misinformation about masks and social distancing, treatments, and vaccines” was undermining the public’s trust in COVID-19 policies, importantly, vaccination [8]. The actual report also warned that common tactics of misinformation spreaders included, among others, “presenting unqualified people as experts; misleading consumers with logical fallacies; setting impossible expectations for scientific research; and introducing conspiracy theories” [8] (p. 9). Of note, the US Surgeon General was as much an *initiator* of the call to action as it was a *follower*, heeding yet another call to action by the World Health Organization (WHO), that in collaboration with the UK government, declared to be fighting, “one click at a time”, misinformation that was driving “vaccine hesitancy” [9] – as per the WHO, among the “top ten threats to global health” [10] – and in so doing leading to seemingly widespread and avoidable hospitalization and death.

1.1 Mis- Dis- and Mal-information (MDM): A national security threat?

Academia would also join the call, with a 2021 multi-author report from the *Centre for Health Security* at the Johns Hopkins Bloomberg School of Public Health, warning that “health-related misinformation and disinformation” were undermining the response to the COVID-19 crisis and eroding trust in public health institutions through “contradictory messages” about “false medical cures” [11]. Senior scholar and lead author Dr. Tara Kirk proffered that “it [was] time for the U.S. to address the problem of health misinformation and disinformation”, calling for “the development of a national strategy [as] an important first step in the establishment of a solution to this threat”, a strategy that would require establishing “a multiagency *national security response* effort that prioritizes management of public health misinformation to prevent disinformation campaigns and educate the public on their use” (ibid) (emphasis added).

As it turned out, a “national security response” was already under way, as indicated by the US Department of Homeland Security (DHS) release, on April 2022, of a “*Disinformation Stops With You*” infographic defining “disinformation” as “false or misleading information that [...] leads people to share [information] without first looking into the facts for themselves, polluting healthy conversations about the issues, and increasing societal divisions” [12]. The organization authoring the infographic, the Cyber Security & Infrastructure Security Agency (CISA) – a little-known body within the DHS – further distinguished three types of problematic information, based on differences in the presumed intentionality of the producers, within what it called “information activities”: misinformation, i.e., inaccurate information albeit “not created or shared with the intention of causing harm, disinformation, i.e., false or inaccurate information deliberately created to mislead, harm, or manipulate, and malinformation, i.e., information “based on fact, but used out of context to mislead, harm, or manipulate” [12]. Their differences notwithstanding, the three types would become the focus of CISA’s Mis-, Dis-, and Malinformation (MDM) team, on the grounds that “foreign and domestic threat actors “use MDM to cause chaos, confusion, and division”, in order to “interfere with, and undermine, [US] democratic institutions and national cohesiveness” [12]. As per the infographic, public authorities appeared troubled with the role of MDM campaigns in the US elections and in shaping the public’s reaction to the COVID-19 public health response.

1.2 An overview of the pan institutional response to MDM

In this review, we have chosen the acronym MDM as including all the terms - misinformation, disinformation, malinformation, infodemic and conspiracy theories - denoting activities that have become the focus of a seemingly global and pan institutional response. In the COVID-19 context, the goal of this response, we hypothesize, is to suppress any health-related information at odds with what has been dubbed, from the pages of *The Lancet*, the “scientific consensus” on COVID-19 – a consensus that as of October 2020 included an agreement that COVID-19 had a lethality “several-fold higher than the seasonal flu”, that the healthy and young could still experience high risk of poor outcomes, that there was little reason to rely on natural immunity, and that there was a pressing need for mass masking, lockdowns, rapid testing, contact tracing, and isolation to control viral spread and transmission, with anything less being a “dangerous

fallacy unsupported by scientific evidence” [13]. This endeavour has encouraged the launch of a new field of academic inquiry, “misinformation studies”, whose examination reveals an intriguing interplay between the scientific enterprise and party politics.

A salient example is the Harvard Kennedy School Misinformation Review, launched in January 2019, showcasing the work of scholars in this new field, who have applied the concept of “misinformation” not only to COVID-19 but also to political processes around 2016, in relation to Brexit and to that year’s US federal elections. Scholars in this field have argued that MDM led UK citizens to vote for Brexit, and US citizens to vote for Donald Trump, both political outcomes spurred by a “resurgence of white, right-wing nationalism” [14](p.1). A similar assertion had been made that same year by former US Pres. Barack Obama, who had then suggested that it was “fake news” that had led to the defeat of Democratic nominee Hillary Clinton [15]. MDM scholars have also argued that because MDM affects matters of great societal significance, and because “media environments” interact [with] functioning democracies”, there is a compelling need to develop expertise to “manage” these environments, meaning prevent, counteract, and if necessary, suppress the spread of MDM in order to protect democracy [16] p.2.

Equally revealing is the examination of the scholarship on MDM from traditional disciplines – public health, political sciences, sociology, or psychology - with authors in these disciplines now self-identifying as “misinformation experts”. For example, an article authored by a multidisciplinary team including political scientists and public health professionals reported strong links between “anti-intellectualism” – a “distrust of experts and intellectuals”, belief in COVID “conspiracies”, and COVID-19 “vaccine hesitancy” [17]. Likewise, a systematic review in Social Science & Medicine authored by a group of international academics examined the “potential antecedents and consequences of COVID-19 “conspiracy beliefs” [18] and linked “less belief in science” or “narratives in line with the scientific consensus” with belief in said conspiracies [18].

Computer scientists have also discussed MDM in relation to COVID. For example, Lee et al, with the Massachusetts Institute of Technology (MIT), have explored how data visualizations have become “a battleground” manipulated by “coronavirus skeptics on US social media” – particularly “anti-maskers” – to demonstrate, incorrectly according to the authors, that by 2021 the crisis was being either exaggerated or over, with said “anti-maskers” countering official positions that the emergency was anything but over and required continuing vigilance [19] (p. 1). Lee et al. concluded that promoting “media literacy” to combat MDM would not solve the problem, since such groups appear to be extremely data literate, yet use this literacy to spread MDM, drawing on “orthodox scientific methods to make unorthodox arguments, beyond the pale of the scientific establishment” (p. 2). They also noted that “anti-maskers” shun “expert interpretations”, valuing instead “unmediated access to information [...], personal research and direct reading”, a stance that the authors imply leads to false beliefs (ibid). Finally, social media has also been actively involved in combating MDM. This involvement was compellingly illustrated by a September 2021 blog post on the popular social media site YouTube, announcing its approach to “crafting policy around medical misinformation” [20]. The approach, suggested the blog post, aligned with public health authorities, and was committed to removing “specifically, content that falsely alleges that approved vaccines are dangerous [...], claims that vaccines do not reduce transmission or contraction of disease, or contain misinformation on the substances contained in vaccines” (ibid).

In contrast to YouTube, whose stance about what counts as MDM is clear, namely, MDM is essentially whatever does not align with the statements of public health authorities, the medical and academic establishment are far less specific about what they mean by MDM, i.e., how they sort false from true information in any particular area of inquiry, whether in science or in politics, what evidence supports their own expert claims about it, and how their recommendation that MDM be suppressed can coexist with traditional normative standards of free scientific and intellectual debate [21], [22]. Audiences are left to speculate about how they would identify MDM when they see it, even as the official messaging about its dangerous nature, as shown earlier, leaves little room for doubting that it should be addressed, and whenever possible, neutralized. However, a preliminary literature search revealed no current or underway review of our phenomenon of interest, critical or otherwise. Our objective is to fill this gap by identifying and appraising evidence on the multiple meanings and framings of COVID-19 MDM in the expert medical and social scientific literature, thus contributing to the debate around this important issue.

2 Material and methods

2.1 Protocol design

We will follow Arksey and O’Malley’s framework for scoping reviews [23] enhanced by the team-based method of Levac and colleagues [24].

Because as critical scholars one all our goals is to *problematize* the framing of MDM rather than assuming it as a “problem” requiring policy interventions, our analysis will be informed by critical traditions of policy, discourse, and document analysis. For example, Carol Bacchi’s critical approach to policy analysis, “What is the problem represented to be?” (WPR), engages the process whereby societal issues – in our case, MDM – become framed as “problems” requiring intervention [25]. Similarly, the tradition of critical discourse analysis – “discourse” meaning any form of text or talk – aims to uncover how discourse and social practices dialectically interact to reflect, legitimize, reproduce, or challenge relations of power [26]. In turn, document analysis considers documents as “social facts” able to communicate meanings and reflect or inform social action [27].

Finally, while traditional scoping reviews generally evaluate “interventions”, other review types, like ours, seek to understand “diverse information needs [of] policymakers [and instead] focus on analysing human experiences and cultural or social phenomenon”, labelled phenomena of interest” [28] (p. 2). Our “phenomenon of interest” will include the meanings and framings of MDM in the medical and social scientific literature in the context of COVID-19 policy and public health countermeasures more generally. The protocol has been registered with the Open Science Framework (<https://osf.io/preprints/socarxiv/3s8pb/>). The review will follow the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Extension for Scoping Reviews (PRISMA-Sc-R) Checklist and will document amendments to the protocol [29]. Because all data is publicly available, ethics approval is not required.

2.2 Objectives of the review and review questions

Our critical scoping review will explore the meanings and framing of the concept of MDM in the context of COVID-19 as communicated by dominant social institutions, through their most authoritative documentary production, i.e., the peer-reviewed literature. We will summarize findings from this literature as we interrogate underlying assumptions in their assertions about MDM. We also aim to assess the implications of identified linguistic and social practices for the health and well-being of populations affected by policies informed by dominant concepts of MDM. To guide our inquiry, we have developed the following six questions, the first three intended to describe expert messaging, the last three intended to appraise this messaging through a WRP critical policy perspective [30].

- What do expert voices mean by MDM? How do they define it operationally? What empirical data or reasons support expert assertions about MDM?
- What drives the production and spread of MDM according to expert voices? What agents are accountable?
- What policy recommendations do expert voices propose to address MDM?
- What is the “policy problem” of MDM represented to be? What presuppositions underpin this representation? What is left unproblematic in the representation of the “problem”?
- How/where has this representation of the ‘problem’ been produced, disseminated, and defended? How has it been (or could it be) questioned, disrupted, replaced?
- What are the effects of this representation of the ‘problem’?

2.3 Data Identification

2.3.1 Types of data

To capture the most respected and authoritative expert perspectives on the phenomenon of interest, we will include refereed articles, in English, from selected medical and social scientific journals, as well as refereed articles produced by scholars affiliated with influential NGOs that play a leadership role in COVID-19 MDM research and policy, with no restrictions of time, place, or type.

2.3.2 Sources of data retrieval

We will conduct searches of select medical and social science literature sources and NGOs identified as influential in the enterprise of identifying and suppressing MDM. To identify literature from the *medical sciences*, we will search the following sources: 1) *PubMed*, 2) *New England Journal of Medicine* (NEJM), *British Medical Journal* (BMJ), and *The Lancet*. We chose this database and these medical journals because of their worldwide reputation among medical professionals, public authorities, and the public. To identify literature from the *social sciences* we will search *Social Science & Medicine*, that describes itself as providing “an international and interdisciplinary forum for the dissemination of social science research on health” and publishes a wide range of articles – empirical and theoretical, including original research, reviews, position papers, and commentaries [31]. Social scientists have been central to framing and informing policies vis-à-vis MDM and COVID-19, and this journal was selected because of its international reputation within the medical/health social scientific community. To characterize the perspectives of NGOs affiliated scholars we will draw from *Schmidt et al 2023 Report on the Censorship-Industrial Complex: The Top 50 Organizations to Know* [32]. This report

was co-authored by investigative journalist and political analyst Matt Taibi, who testified before the US Congress on his findings from the Twitter Files and on the growth of what he labelled the “censorship-industrial complex” [33]. This will result in three distinct datasets: 1) medical sciences; 2) social sciences; 3) scholars affiliated with NGOs identified as playing a major role in the institutional response to MDM (hereafter “NGO MDM scholars”).

2.3.3 Search methods for identifying data

The websites of the selected medical journals will be searched through the terms [“misinformation” OR “disinformation” OR “infodemic”] in the abstract, title or keywords, combined with [“COVID-19”]. For PubMed, we will use MeSH Major Topic terms [“misinformation” OR “disinformation” OR “infodemic”], combined with [“COVID-19”]. We will search the *Social Science & Medicine* website with the keywords: “COVID AND [misinformation OR conspiracy OR disinformation OR infodemic NOT vaccine hesitancy]”. To collect literature from counter-misinformation scholars affiliated with the NGO sector, we will search for publications authored by the Directors and/or Research Directors of key organizations, we will identify the Directors and/or Research Directors of each of these organizations, and subsequently search Google Scholar by combining the Director/ Research Director names with the keyword “COVID” and reviewing the first five pages of search returns for relevant peer-reviewed articles written by scholars. [Table 1].

Table 1 Data description & sources

Category	Sources	Search terms	URLs
Medical Sciences	PubMed New England Journal of Medicine (NEJM), British Medical Journal (BMJ), and The Lancet.	MeSH Major Topic terms [“misinformation” OR “disinformation” OR “infodemic”], combined with [“COVID-19”]. [“misinformation” OR “disinformation” OR “infodemic”] in the abstract, title or keywords, combined with [“COVID-19”]	https://pubmed.ncbi.nlm.nih.gov/advanced/ https://www.nejm.org/ https://www.bmj.com/ https://www.thelancet.com/
Social Sciences	Social Science & Medicine	“COVID AND [misinformation OR conspiracy OR disinformation OR infodemic NOT vaccine hesitancy]”.	https://www.sciencedirect.com/journal/social-science-and-medicine
NGO MDM scholars	Search for articles authored by Directors and/or Research Directors of key organizations identified through Schmidt et al 2023 Report on the Censorship-Industrial Complex: The Top 50 Organizations to Know	Search Google Scholar by combining the Director/ Research Director names with keyword “COVID” and reviewing first 5 pages of search returns for relevant peer-reviewed articles by scholars.	https://judiciary.house.gov/sites/evo-subsites/republicans-judiciary.house.gov/files/evo-media-document/shellenberger-testimony.pdf

2.3.4 Data selection

For each dataset, one reviewer will conduct a preliminary search to discard irrelevant material and narrow the retrieved documents to a number manageable given our human resources and timeline. Upon this initial screening, two reviewers will independently screen remaining documents in relation to our research questions and eliminate those that do not

meet the inclusion criteria. Rayyan systematic review software will be used to perform double-blind screening of the *Social Sciences & Medicine* articles, track inclusion/exclusion decisions and identify disagreements between reviewers, which will be resolved by full team discussion. For the medical and academic-NGO data sets, single-reviewer screening will be conducted, with a second reviewer checking and confirming (or not) article selection. Excluded documents with relevant material may be incorporated as context in the completed review. Tables for all included articles will be created and included as appendices in the final review.

2.4 Data analysis and synthesis

2.4.1 Data charting (i.e., from the perspective of article authors)

Before beginning full data charting, two reviewers will independently chart data from a common sample of studies and the team will meet to calibrate the approach and discuss results. The data charting will be prepared using Dedoose mixed methods analysis software. Selected articles will be treated as “informants” and will be “asked” a preliminary set of descriptive and analytic questions, the latter informed by the WPR approach, as follows:

2.4.2 Descriptive questions (perspectives from the authors of included articles)

- What is MDM? What makes it MDM? How would one recognize it when one sees it?
- Is it a ‘policy problem’ and if so, why?
- What drives the problem and who is accountable for it? If social actors are involved, what are their traits and motivations?
- Who are the victims/targets of MDM? How can they be harmed by it?
- What should be done about MDM and who should do it?

Analytic questions (interpretations from the authors of this scoping review)

- What assumptions underpin expert representations of the ‘problem’ of ‘MDM’?
- What, if any, fallacies, are built into the arguments supporting these representations?
- Can the ‘problem’ be thought about differently? What is left unproblematic in this problem representation?
- What effects are produced by this representation of the ‘problem’? How/where has this representation of the ‘problem’ been produced, disseminated, and defended? How has it been (or could it be) questioned, disrupted, and replaced?

Guided by these questions, a coding system will be developed in Dedoose. Extracted data will include details about the phenomena of interest relevant to our review objective (e.g., how MDM is defined, if and why it is framed as a policy problem, the agents and targets of misinformation, and solutions to the problem), and contextual factors (e.g., author affiliation; declared conflicts of interests). The documents within each dataset will be charted by two investigators and disagreements will be resolved through full team discussion.

2.4.3 Data analysis/synthesis

Qualitative thematic synthesis will be used to transform the data into themes [34], [35], applying a hybrid, deductive/inductive approach to enable reading and rereading the evidence to identify themes, comparing the themes as the analysis progresses, and meeting regularly to resolve uncertainties or ambiguities. Our guiding review questions will help to identify preliminary themes, but as we assign data to them, we will assess if they are supported by the data or require revision, or addition of new themes [36]. We will report both qualitative thematic synthesis and frequency distributions to illustrate the strength of support for themes [37].

2.4.4 Subgroup analysis

Subgroup analysis will be performed to compare findings according to discipline (e.g., medical sciences versus social sciences datasets); timing within the COVID-19 crisis (e.g., pre-versus post launching of global vaccination); author location (e.g., location of institutional affiliation); and other potentially relevant factors influencing the phenomenon of interest.

2.4.5 Quality assessment and risk of bias

The scoping review approach excludes the assessment of risk of bias [38]. Especially in our case, our data will be “biased” by its very nature, meaning that they will likely align with the most official meaning and framing of MDM. Indeed, our goal is precisely to critically appraise this meaning and framing, so assessing for quality and bias and

excluding documents that fail to meet predetermined standards of quality/bias would defeat this goal, thus our decision to include all articles meeting the inclusion criteria regardless of our own evaluation about their methodological quality.

3 Discussion

Our preliminary survey of the literature reveals that a definitional attribute of expert meanings of MDM is their alignment with the “scientific consensus” described earlier [17], [39]. However, this “consensus” is hard to justify as a standard against which truth or falsity should be determined to decide if a proposition counts as MDM. Notably, the argument that an expert consensus can provide a standard of truth or falsity was rejected by California Justice William Shubb, who granted an injunction to two cases that have challenged the constitutionality of Assembly Bill 2089, dubbed “Physicians and surgeons: unprofessional conduct”. The bill, signed into law by California Governor Gavin Newsom in January 2023, aimed at punishing physicians that the California Medical Association has determined engage in “misinformation”. However, Justice Shubb noted that the term “misinformation” is defined by the College as “false information that is contradicted by contemporary scientific consensus contrary to the standard of care”, a provision that “put simply [is] grammatically incoherent”, as it is “impossible to parse the sentence and understand the relationship between the two clauses”, an incoherence that may have “chilling effects” on the right to free speech [40].

Similarly, we observe that expert claims about MDM are unclear about what standards the expert literature applies – other than, perhaps, the “consensus” of experts themselves – to determine whether a proposition is true or false, and about what evidence informs those standards. We also observe that research and policies concerning MDM appear to focus more on the ostensibly negative cognitive, psychological, or ideological traits of those who spread it than on the empirical evidence supporting the claims of those who warn against MDM. Put another way, we observe repeated arguments that are circular, based on authority, non-sequitur, or ad hominem – all of them logical fallacies. Our preliminary survey of the literature also reveals that while official COVID-19 policy has been unprecedented, in scale and kind, in world history, there has been scant critical interrogation of what experts mean by, how they frame, or what assumptions they rely on to support assertions about, MDM in the COVID-19 context, and of the implications of these assumptions for public policy, equity, and civil, social, and political rights.

What is most concerning, assuming that open dialogue and free debate are necessary to promote the value of autonomy and scientific knowledge of societal relevance [41], as well as to protect the democratic process, is the generalized approach, whether from medical, academic, NGO, and government circles, to recommend “fact-checking” and “public education”, seemingly used as euphemisms for what in other contexts would have been considered outright censorship. For example, certain authors have called on public health professionals to “correct misinformation”, and on social media companies to censor MDM, recommending fact-checking, tagging and flagging of social media content by experts, and coordinating between governments and public health professionals to “mitigate misinformation” [42], [43] (p. 273). Others have recommended “conspiracy theory inoculation” – tracking and correcting information on social media to “help safeguard the public against misinformation and misinformed behaviors” – suggesting the need to “educate” social media users to consider the accuracy of information and to encourage “collectivism in messaging” [44] (p. 157). It is unclear how this “collectivism” differs from totalitarian political systems with a well-documented history of suppressing any challenge to the social order, including the scientific social order, through bureaucratic apparatuses [22], [45], [46], or from the phenomenon of “groupthink” that led to major 20th century geopolitical disasters that open debate could have prevented [47].

4 Conclusion

While in the past the role of academia, medical scientists, NGOs, and media may have been at least in part to speak truth to power, it appears that the goal has now shifted towards deploying the language of science to help to “manage” the democratic process [48] or to legitimize political or moral preferences by framing them as “medical issues” [49]. By identifying, summarizing, and appraising the meanings and framings of MDM as conveyed by the documentary production of dominant social institutions, we expect to inform best practices in scientific inquiry, medical research, and public health policy moving forward.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Author contributions

C. Chauhan designed the scoping review and wrote this protocol. NH, CH, and JMcD contributed substantive intellectual content and assisted with protocol writing. All team members will participate in data selection, extraction, and synthesis, and have read and approved this protocol.

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