Revista ARACÊ
ISSN: 2358-2472

FIGHTING DISINFORMATION: STRATEGIES TO PROTECT PUBLIC HEALTH AGAINST FAKE NEWS

https://doi.org/10.56238/arev7n3-272

Submitted on: 02/26/2025 **Publication date:** 03/26/2025

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Revista ARACÊ
ISSN: 2358-2472

ABSTRACT
The dissemination of fake news in the context of public health has been consolidated as one of the most pressing challenges today, compromising the population's adherence to scientific recommendations and negatively impacting the formulation and implementation of public health policies. The advancement of digital technologies and the popularization of social networks have intensified the spread of misleading content, favoring the amplification of untrue information that affects everything from public perception of treatments and vaccines to the credibility of health institutions. In view of this scenario, this study developed a narrative review of the literature to analyze the main strategies employed to confront misinformation in public health, addressing regulatory, educational, and technological aspects. The results show that the simple dissemination of correct scientific information is not enough to mitigate the effects of fake news, and an integrated approach that involves legal regulation, digital literacy, and the use of artificial intelligence is essential to identify and contain disinformation. It is concluded that the fight against fake news in public health requires the articulation of interdisciplinary policies that strengthen society's trust in science, promote media education, and ensure a safer and more transparent informational environment, reducing the negative impacts of misinformation on population health.

Keywords: Fake news. Public health. Disinformation. Regulation. Artificial intelligence.

Revista ARACÊ
ISSN: 2358-2472

INTRODUCTION

The dissemination of false information has become a global phenomenon of wide repercussion, affecting different spheres of society, including public health. The advancement of communication technologies and the popularization of social networks have allowed an unprecedented spread of fake news, creating an informational environment in which the distinction between facts and disinformation becomes increasingly complex (Iufeva, 2023). In the context of health, this dynamic takes on even more worrying contours since incorrect information about treatments, vaccines, and prevention measures can directly compromise the population's adherence to scientific recommendations and public health policies (Deepak et al., 2021).

The circulation of *fake news* about public health has been widely associated with negative impacts on the control of infectious diseases, generating resistance to vaccination and discrediting medical and government institutions (Jin et al., 2022). During the COVID-19 pandemic, for example, the dissemination of misleading content compromised strategies to cope with the health crisis, making it difficult to adhere to the guidelines established by health authorities and fostering risky behaviors (Rocha et al., 2021). In a broader context, misinformation interferes with the formulation of evidence-based health policies, compromising the planning of preventive actions and effective institutional communication (Riazi; Livan, 2024).

The spread of fake news is not limited to the actions of isolated individuals or groups but is part of a media ecosystem that involves digital platforms, engagement algorithms, and political and economic interests (Schoenmueller; Blanchard & Johar, 2022). The viral character of this information is directly related to the way it is structured – resorting to emotional triggers and persuasive narratives that reinforce pre-existing beliefs and favor their acceptance by the public (Stewart et al., 2021). This scenario highlights the need for multidimensional approaches that combine legal regulation, improvement of media education, and development of technological tools for the identification and neutralization of disinformation (Lewandowsky; Van der Linden, 2021).

In view of this panorama, this study aims to analyze the main strategies used to combat the dissemination of *fake news* in the context of public health, addressing regulatory, educational, and technological aspects. To this end, a narrative review of the literature was conducted, aiming to integrate different theoretical perspectives and empirical evidence on the subject. From this analysis, it seeks to understand how the

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ISSN: 2358-2472

articulation of these strategies can contribute to mitigating the negative impacts of disinformation, strengthening trust in science, and promoting a safer and more transparent informational environment.

METHODOLOGY

The present study adopted the methodology of a narrative review of the literature based on the selection, analysis, and synthesis of academic publications that address the impact of misinformation on public health, as well as the strategies to combat it. The narrative review allows for a comprehensive and flexible approach, enabling the critical articulation between different theoretical and empirical perspectives. Unlike systematic reviews, this type of review is not restricted to rigid criteria for selecting studies, allowing for a broader and more integrative discussion of the phenomenon in question.

The search for references was carried out in databases recognized by the scientific community, including Scopus, Web of Science, PubMed, and Google Scholar, in order to ensure the comprehensiveness and quality of the selected sources. Descriptors such as "fake news", "disinformation", "public health", "content regulation", "artificial intelligence for fact-checking," and "media education" were used. The selection of studies was based on relevance to the theme, the time frame of the last five years, and academic relevance, prioritizing articles published in high-impact journals.

The extracted data were organized according to three main thematic axes: (1) impact of misinformation on the perception of collective health and adherence to sanitary measures; (2) regulatory, educational, and technological strategies to combat fake news; and (3) challenges and limitations of the approaches currently used to mitigate the spread of disinformation. The qualitative analysis of the selected texts allowed the construction of a cohesive discourse, connecting empirical evidence to the theoretical foundations that guide policies and practices to confront fake news in public health.

The narrative review, by not being restricted to quantitative meta-analysis, provides an in-depth understanding of the nuances of the problem and the different approaches proposed in the literature. However, it is recognized that the subjectivity inherent to this type of review can influence the selection and interpretation of the studies analyzed. Thus, we sought to mitigate these biases through the triangulation of information and the use of multiple sources of evidence, ensuring a discussion based on different academic and institutional perspectives.

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RESULTS AND DISCUSSION

The proliferation of disinformation in the context of public health highlights the urgent need to articulate strategies that transcend the simple dissemination of scientific information, contemplating the social and technological dynamics through which *fake news* is produced, disseminated, and absorbed by the public. The ease of spreading fake news, especially in digital environments, is a challenge that unfolds not only in the sphere of communication but also in the formulation of public policies aimed at mitigating the impacts of misinformation on population health (Deepak et al., 2021).

When analyzing the dissemination of fake news on health topics, it is observed that its impact goes beyond the individual sphere, configuring itself as a phenomenon of a collective nature, capable of compromising adherence to sanitary measures and reliability in health institutions (Jin et al., 2022). The spread of distorted information stems not only from the deliberate intention to deceive but also from the cognitive vulnerability of individuals in the face of persuasively constructed narratives that exploit preexisting emotions and beliefs (Stewart et al., 2021). Thus, the mere publication of denials and corrections is not sufficient to contain the dissemination of this information; A more comprehensive framework is needed that includes regulation mechanisms, educational initiatives, and technological solutions capable of intervening in an early and efficient way in the cycle of disinformation.

The regulation of *fake news* represents one of the aspects of this confrontation, being the target of discussions that oppose the need to curb the spread of misleading information to the preservation of freedom of expression. Different legal systems have sought to develop legal mechanisms to hold individuals and corporations accountable who actively contribute to the spread of disinformation (Ang, Rahman, & Teo, 2023). However, the effectiveness of these measures depends not only on punitive sanctions but also on the implementation of policies that encourage the transparency and accountability of digital platforms in content moderation (França & Camarão, 2022). At the same time, regulation alone does not solve the underlying problem, and it is necessary to articulate it with media education and awareness strategies.

Media literacy is essential in enabling individuals to identify and question misleading information. The vulnerability of the population in the face of disinformation finds a strong correlation with digital literacy and the critical ability to assess the reliability of sources (Castro, 2024). In this sense, educational programs must be structured with the aim of

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promoting an in-depth understanding of the mechanisms of fake *news* production, unveiling the discursive strategies used to manipulate public opinion (Iufeva, 2023). Education must, therefore, go beyond simply imparting correct information, enabling individuals to critically interpret the informational flow to which they are exposed.

In the technological sphere, artificial intelligence has been consolidated as a promising instrument in the detection of *fake news*, allowing the identification of discursive patterns and the traceability of the dissemination of misleading information (Paredes, 2023). Advanced algorithms have been employed to classify content based on its credibility, reducing the spread of fake news on digital platforms (Saini; Khatarkar, 2023). However, the automation of these processes is not without challenges since the definition of criteria for detecting fake news must be guided by principles of transparency and accountability, preventing algorithmic moderation from resulting in undue censorship or automated cognitive biases (Neo, 2022).

The fight against health misinformation, therefore, requires the integration of regulatory, educational, and technological measures, ensuring a comprehensive and effective approach. The articulation between these axes makes it possible not only to reduce the dissemination of misleading information but also to strengthen the population's trust in science and health institutions, consolidating a more transparent and socially responsible communication environment (Riazi; Livan, 2024).

CONCLUSION

The spread of misinformation in the context of public health represents a challenge that transcends the simple dissemination of correct scientific information, requiring a broad approach that considers the social, technological, and regulatory factors that contribute to the spread of *fake news*. The present narrative review showed that disinformation is not limited to the isolated actions of individuals or groups but is part of a complex informational ecosystem where engagement algorithms, political interests, and the cognitive vulnerability of individuals act to amplify misleading content.

The impact of *fake news* on public health is strongly manifested in resistance to vaccination, distrust of medical institutions, and compromised adherence to health measures, making it difficult to formulate and implement evidence-based policies. The mere availability of reliable information, although essential, is not enough to contain the proliferation of false content, and it is essential to adopt integrated strategies that involve

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legal regulation, media education, and the use of advanced technologies to identify and neutralize disinformation.

The regulation of disinformation has been the subject of intense debate, especially regarding the balance between the need to contain fake news and the preservation of freedom of expression. Although legislative measures can act as instruments of accountability and transparency, the effectiveness of these initiatives depends on their articulation with the self-regulation mechanisms of digital platforms and with institutional campaigns aimed at promoting informational reliability. At the same time, media education emerges as a central element in the training of the population to critically interpret the content to which they are exposed, reducing their susceptibility to informational manipulation.

From a technological point of view, artificial intelligence and other automated tools have shown potential to assist in detecting and containing the spread of *fake news*, allowing the analysis of discursive patterns and the tracking of the spread of misleading information. However, challenges such as the transparency of moderation criteria and the mitigation of algorithmic biases still need to be addressed for these technologies to be applied ethically and effectively.

Given this scenario, it is concluded that the fight against misinformation in public health must be guided by a multidimensional approach, combining regulatory measures, educational initiatives, and technological solutions in a synergistic manner. Only through this articulation will it be possible to mitigate the negative impacts of *fake news*, strengthen the population's trust in science, and promote a safer and more transparent informational environment. Thus, confronting disinformation should not be seen as a one-off action but as a continuous process of adaptation and innovation essential for building a more informed and resilient society.

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