



## The Spread of Health Misinformation on Social Media: Implications for Public Trust and Policy Response

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### Abstract

The rapid proliferation of health misinformation on social media has emerged as a significant public health challenge, particularly during the COVID-19 pandemic. False claims about the virus, treatments, and vaccines have spread widely across platforms such as Facebook, Twitter, TikTok, Instagram, and WhatsApp, influencing public perception, behaviour, and trust in health authorities. This study examined the mechanisms through which health misinformation propagates online, its behavioural and societal consequences, and the effectiveness of policy and regulatory interventions. Employing a mixed-method approach, the research combines qualitative content analysis of social media posts, forums, and news articles with quantitative surveys and behavioural analysis to measure exposure to misinformation and its impact on vaccine hesitancy and adherence to preventive measures. The findings indicate that emotionally salient misinformation spreads more rapidly, with influential figures and peer networks amplifying its effects. Exposure to misinformation correlates strongly with increased vaccine hesitancy, reduced compliance with preventive health behaviours, and diminished trust in public health institutions. The study also highlighted the ethical and legal tensions in regulating misinformation, the role of platform accountability, and the importance of culturally tailored digital literacy and behavioural interventions. Recommendations include strengthening digital citizenship, enhancing platform transparency, implementing evidence-based behavioural nudges, and fostering community engagement to restore trust and improve public health compliance. Overall, this research underscores the urgent need for coordinated, multi-stakeholder strategies to mitigate the harmful effects of online health misinformation and ensure that social media contributes positively to public health outcomes.

**Keywords:** Health misinformation, social media, COVID-19, vaccine hesitancy, public trust, behavioural outcomes, digital literacy, fact-checking, platform accountability, public health policy.

## 1. Introduction

The rapid evolution of social media platforms has fundamentally transformed the circulation of information in modern societies. Platforms such as Facebook, Twitter, TikTok, Instagram, and WhatsApp allow users to generate, share, and consume content instantaneously.<sup>1</sup> While these technologies provide unprecedented opportunities for disseminating knowledge, they simultaneously enable the rapid spread of inaccurate or misleading health information. The COVID-19 pandemic has particularly amplified these challenges, as false claims about the virus, treatments, and vaccines proliferated online faster than verified information released by health authorities.<sup>2</sup>

The consequences of misinformation extend beyond individual beliefs. Exposure to misleading content influences health-related behaviours, reduces compliance with preventive measures, erodes trust in public health institutions, and can result in tangible public health crises. Vaccine hesitancy is a prime example, whereby misinformation about COVID-19 vaccines has slowed immunization campaigns, particularly in vulnerable populations, and delayed the attainment of herd immunity.<sup>3</sup>

The legal, regulatory, and ethical frameworks governing online content, combined with behavioural interventions, play a critical role in mitigating these risks. Governments, public health agencies, and social media platforms face complex challenges in balancing the protection of free expression with the necessity to prevent harm to public health. This article examines the mechanisms through which health misinformation spreads on social media, explores its behavioural and societal consequences, and evaluates policy and regulatory strategies designed to mitigate its impact.<sup>4</sup>

## 2. Mechanisms of Health Misinformation on Social Media

### 2.1 User-Generated Content and Virality

Unlike traditional media, social media relies heavily on user-generated content, which often lacks formal editorial oversight. Individuals can post videos, memes, opinions, and other forms of content that may not be fact-checked or verified. This democratization of information has

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<sup>1</sup> Statista, Social Media Usage Worldwide, 2023. <https://www.statista.com/topics/1164/social-media-usage-worldwide/> accessed 1 March 2026

<sup>2</sup> World Health Organization. 'Managing the COVID-19 Infodemic: Promoting Healthy Behaviours and Mitigating Misinformation' WHO 2020.

<sup>3</sup> Larson, H., et al. 'The State of Vaccine Confidence 2016: Global Insights and Implications for COVID-19' *Nature Medicine* (2016) 22

<sup>4</sup> Vosoughi, S., Roy, D., & Aral, S. 'The Spread of True and False News Online' *Science* (2018) 359.

advantages, such as promoting civic engagement and facilitating rapid dissemination of emergency health guidance. However, it simultaneously enables misinformation to circulate widely and gain traction.<sup>5</sup>

Sensational claims such as purported adverse effects of vaccines, false cures, or conspiratorial narratives tend to receive disproportionate attention because social media algorithms prioritize engagement over accuracy. Content that generates likes, shares, and comments is amplified in user feeds, often regardless of its factual reliability. This algorithm-driven amplification creates a feedback loop in which false claims reach large audiences quickly, sometimes achieving virality before public health authorities can respond.<sup>6</sup>

Misinformation is particularly pervasive when it leverages pre-existing fears or uncertainties. During the early stages of the COVID-19 pandemic, content warning of exaggerated side effects of vaccines or questioning the speed of vaccine development spread rapidly. Users often shared such content without verification, motivated by concern for personal and community safety, highlighting the complex interplay between fear, engagement, and misinformation dissemination.<sup>7</sup>

## 2.2 Emotional Salience and Cognitive Biases

Content that evokes strong emotions, fear, anger, moral outrage, or disgust—spreads more rapidly than neutral, factual messages.<sup>8</sup> Cognitive biases such as confirmation bias, whereby individuals favour information consistent with their pre-existing beliefs, further exacerbate the impact of misinformation. Users sceptical of government institutions or medical authorities are particularly susceptible to claims suggesting that vaccines are unsafe or part of conspiratorial agendas.

Social media creates echo chambers, in which users predominantly interact with content that aligns with their beliefs. Filter bubbles reinforce exposure to misinformation while limiting encounters with corrective or scientifically accurate content. Repeated exposure in such environments solidifies false beliefs, a phenomenon documented in behavioural science as the illusory truth effect, where repeated claims are perceived as more credible regardless of veracity.<sup>9</sup>

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<sup>5</sup> Allcott, H., & Gentzkow, M. 'Social Media and Fake News in the 2016 Election' *Journal of Economic Perspectives* (2017) 31(2).

<sup>6</sup> Del Vicario, M., et al. 'The Spreading of Misinformation Online' *PNAS*, (2016) 113(3)

<sup>7</sup> Pulido, C. M., Villarejo-Carballido, B., Redondo-Sama, G., & Gómez, A. 'COVID-19 Infodemic: More Retweets for Science-Based Information on Coronavirus Than for False Information' *International Sociology* (2020) 35(4)

<sup>8</sup> Pennycook, G., & Rand, D. G. 'Fighting Misinformation on Social Media Using Accuracy Nudges' *Psychological Science*, (2020) 30(2).

<sup>9</sup> Lewandowsky, S., et al. 'Misinformation and Its Correction: Continued Influence and Successful Debiasing' *Psychological Science* (2012) 13(3).

Emotional salience also interacts with cognitive processing. When content provokes strong emotional reactions, users are less likely to engage in critical evaluation of its credibility. Fear-based messages about potential vaccine side effects or conspiracy-driven narratives about government control often exploit this vulnerability, increasing their likelihood of spread and adoption.<sup>10</sup>

### **2.3 Role of Influencers and Peer Networks**

Influencers and prominent figures play a critical role in shaping online discourse. Individuals with large followings, including celebrities, religious leaders, and political figures, can serve as vectors for misinformation. When these figures share false claims, their audiences are more likely to accept and replicate the messages due to perceived authority and social trust.<sup>11</sup>

Social cognitive theory posits that individuals learn behaviours by observing models in their environment.<sup>12</sup> Online influencers, as highly visible models, can shape public attitudes and health-related behaviours. For example, when a widely followed figure publicly questions vaccine safety, followers may emulate this scepticism, leading to delayed vaccination, rejection of mask mandates, or noncompliance with other health guidelines<sup>13</sup>.

Peer networks similarly reinforce misinformation. In digital spaces, peer validation, through likes, comments, and shares, creates social proof that strengthens belief in false claims. Community members may adopt behaviours or attitudes consistent with the group norm, even when they contradict verified health advice. This dynamic illustrates how misinformation is not merely an individual cognitive issue but a social and networked phenomenon with systemic public health implications<sup>14</sup>.

### **Methodology**

This study adopts a mixed-method approach, combining both qualitative and quantitative research designs to provide a comprehensive understanding of health misinformation on social media. The qualitative component focuses on content analysis of social media posts, online forums, and news articles, aiming to identify recurring themes and patterns in misinformation. By examining how

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<sup>10</sup> Kearney, M., & Levine, P. 'Media Influences on Misinformation and Behaviour' *Journal of Economic Behaviour & Organization*, 2021.

<sup>11</sup> Tang, L., Bie, B., Park, S. E., & Zhi, D. "Social Media and Vaccine Hesitancy: Influences of Influencers and Opinion Leaders." *Human Vaccines & Immunotherapeutics* (2019) 15(11).

<sup>12</sup> Bandura, A. Social Cognitive 'Theory of Mass Communication' *Media Psychology* (2001) 3 p.265-299

<sup>13</sup> Betsch, C., et al. 'How Behavioural Science Can Help Fight COVID-19' *Nature Human Behaviour*, (2020) 4.

<sup>14</sup> Cinelli, M., et al. 'The COVID-19 Social Media Infodemic' *Scientific Reports* (2020) 10.

misinformation is framed, circulated, and amplified online, the study captures the nuanced ways in which false health information spreads and influences public perception.

The quantitative component complements this by employing surveys and behavioural analysis to assess public exposure to misinformation and its relationship with vaccine hesitancy and adherence to preventive health measures. This dual approach enables the triangulation of data, offering both depth and breadth in understanding the behavioural impact of online misinformation.

Data were collected from multiple sources. Social media content was gathered from platforms such as Facebook, Twitter, TikTok, and WhatsApp, with a focus on posts and videos related to COVID-19 and vaccines. Surveys were distributed to a diverse adult population across urban and rural areas to capture variations in exposure to misinformation and corresponding behavioural responses. Additionally, official records and reports, including health agency publications, WHO guidelines, and government communications, declassified documents were reviewed to provide factual context and support comparative analysis.

The sampling strategy varied according to the data type. Social media content was collected purposively, targeting posts with high engagement to ensure inclusion of the most influential misinformation. Survey respondents were selected using probabilistic methods to ensure representativeness across different demographics.

For analysis, content was categorized based on the type of misinformation, including safety concerns, conspiracy theories, and alternative treatments, as well as its frequency of appearance. Survey responses were statistically analysed using regression and correlation models to identify relationships between exposure to misinformation and behaviours such as vaccine hesitancy or compliance with preventive measures. Finally, a comparative policy analysis examined the effectiveness of regulatory and platform-based interventions across different jurisdictions, assessing which approaches were most successful in mitigating the spread of misinformation.

### **3. Case Study: COVID-19 Vaccine Misinformation**

#### **3.1 Types of Misinformation**

During the COVID-19 pandemic, a wide array of misinformation circulated on social media platforms. Common narratives included claims that vaccines could alter human DNA, contained microchips for government surveillance, or caused infertility.<sup>15</sup> Other narratives misrepresented

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<sup>15</sup> WHO 'Vaccine Misinformation during COVID-19: Challenges and Recommendations' (2021).

data, such as overstating vaccine-related mortality or hospitalization rates, or promoted unproven “alternative treatments” like herbal remedies or ivermectin misuse.

These false narratives exploited the public’s fear and uncertainty. During the early vaccine rollout, limited availability and rapidly changing scientific guidance left gaps in knowledge, which were quickly filled by unverified claims. Misinformation often merged fragments of truth with speculation, making it more difficult for the public to distinguish credible information from falsehoods.<sup>16</sup>

### 3.2 Behavioural Impacts

The behavioural consequences of misinformation were significant. Individuals exposed to false claims were less likely to participate in vaccination campaigns, even when vaccines were accessible.<sup>17</sup> Vaccine hesitancy delayed herd immunity, prolonging viral transmission and increasing the strain on healthcare systems. Beyond vaccination, misinformation influenced compliance with other preventive measures, including mask-wearing, social distancing, and testing protocols.<sup>18</sup>

These behaviours had cascading effects. Delayed vaccination and reduced compliance increased the likelihood of infection clusters, particularly in vulnerable populations. Communities exposed to misinformation often exhibited lower adherence to public health measures, demonstrating that the consequences of digital falsehoods extend beyond individual choices to societal health outcomes.<sup>19</sup>

### 3.3 Social Consequences

Misinformation contributed to social polarization. Communities divided along ideological, political, or cultural lines often reinforced false narratives through peer-to-peer interactions, while trust in healthcare authorities eroded.<sup>20</sup> Online harassment of healthcare workers and public health advocates increased, creating a chilling effect that discouraged professionals from sharing accurate information.

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<sup>16</sup> Lewandowsky, S., et al. ‘Misinformation and Its Correction in Public Health Crises’ *The Lancet* (2020) 396.

<sup>17</sup> Betsch, C., et al. ‘Effects of Misinformation on Vaccine Uptake: Evidence from Surveys’ *PNAS* (2021) 118(12).

<sup>18</sup> Jamison, A. M., et al. ‘Mis- and Disinformation in Pandemic Health Crises’ *American Journal of Public Health* (2020) 110(7).

<sup>19</sup> Roozenbeek, J., et al. ‘Susceptibility to COVID-19 Misinformation’ *Nature Human Behaviour* (2020) 4.

<sup>20</sup> Allcott, H., & Gentzkow, M. ‘Behavioural Implications of Social Media Misinformation’ *Journal of Economic Perspectives* (2017) 31(2).

In extreme cases, misinformation fueled physical protests, refusal to receive medical care, and reliance on unsafe treatments<sup>21</sup>. Such behaviors underscored the high stakes of digital misinformation, demonstrating that unchecked false content can have tangible, real-world consequences, not merely online implications.<sup>22</sup>

## 4. Legal and Ethical Frameworks

### 4.1 Regulatory Challenges

Governments face significant challenges in regulating misinformation due to protections of free speech.<sup>23</sup> Legal frameworks must balance individual expression with public safety, especially when misinformation poses tangible threats to life and public health. During the COVID-19 pandemic, governments worldwide grappled with decisions about whether to remove false claims from social media, mandate health information, or impose penalties on content creators.

Public health laws often allow regulation during emergencies, but overly broad restrictions may raise debates regarding censorship, civil liberties, and the scope of government authority.<sup>24</sup> For instance, while prohibiting the spread of false claims about vaccines could protect public health, overly aggressive measures could be perceived as suppressing dissenting opinions, eroding trust, and provoking legal challenges in jurisdictions with strong constitutional protections for free expression.<sup>25</sup>

Balancing regulation with individual rights requires nuanced policy design. Policies must clearly define harmful misinformation, establish criteria for removal or labeling, and provide transparent mechanisms for appeals. Ambiguity in these frameworks risks arbitrary enforcement, undermining both public trust and the perceived legitimacy of authorities.<sup>26</sup>

### 4.2 Platform Liability

Social media platforms occupy a unique intermediary position. They host user-generated content while being expected to mitigate harm caused by misinformation. Ethical frameworks suggest that

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<sup>21</sup> Zarocostas, J. 'How to Fight an Infodemic' *The Lancet* (2020) 395.

<sup>22</sup> Kim, H. K., & Dennis, A. R. 'Echo Chambers and Health Misinformation: Behavioural Consequences' *MIS Quarterly* (2020) 944(3).

<sup>23</sup> European Union, Digital Services Act (DSA) 2022.

<sup>24</sup> Baraniuk, C. 'The Legal Limits of Regulating COVID-19 Misinformation' *BMJ Journals* (2020) 371.

<sup>25</sup> Johnson, N. F., et al. 'Free Speech, Public Health, and Misinformation: Global Perspectives' *Journal of Law, Medicine & Ethics* (2020) 48(3).

<sup>26</sup> Tambini, D. 'Regulating Misinformation: Transparency and Accountability in Platform Governance' *Internet Policy Review* (2020) 9(3).

platforms should prioritize public safety while maintaining transparency, fairness, and accountability in moderation practices.<sup>27</sup>

Policies may include labelling content as misinformation, demoting unverified posts in feeds, redirecting users to authoritative health sources, or temporarily removing content that poses immediate threats to health.<sup>28</sup> These interventions aim to reduce harm without fully censoring content, allowing users to engage with information while signaling credibility concerns.

Platform liability frameworks are evolving. For example, the European Union's Digital Services Act requires large platforms to implement measures against systemic dissemination of illegal content, including harmful health misinformation.<sup>29</sup> Similar frameworks in other countries increasingly hold platforms accountable for algorithmic amplification that favors viral falsehoods. However, enforcement challenges persist, particularly when platforms operate across multiple jurisdictions with differing legal standards.

### 4.3 Ethical Considerations

From an ethical standpoint, misinformation violates the principle of non-maleficence—actively or passively causing harm by spreading false information. Digital citizens, including institutions and individuals, share responsibility for verifying information, refraining from sharing unverified claims, and avoiding manipulative content that exploits fear, uncertainty, or moral panic.<sup>30</sup>

Ethical digital citizenship encompasses the promotion of accuracy, responsible engagement, and recognition of the social consequences of online actions. For instance, healthcare professionals sharing unverified claims about vaccines undermine public trust, even if motivated by caution. Similarly, platforms that prioritize engagement metrics over accuracy inadvertently contribute to harm, raising questions about corporate ethical responsibility.<sup>31</sup>

Ethical frameworks for misinformation also emphasize justice and equity. Vulnerable populations are disproportionately affected by false claims due to lower digital literacy, limited access to authoritative sources, or heightened exposure to social media content in peer networks.<sup>32</sup> Policies and interventions must therefore consider not only the reduction of misinformation but also equitable protection of all communities.

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<sup>27</sup> Gillespie, T. *Custodians of the Internet: Platforms, Content Moderation, and the Hidden Decisions That Shape Social Media* (Yale University Press Connecticut 2018).

<sup>28</sup> Pennycook, G., et al. 'Behavioural Approaches to Reducing Misinformation Online' *Nature Human Behaviour*, (2020) 4.

<sup>29</sup> European Commission 'Digital Services Act: Ensuring a Safe and Accountable Online Environment' 2022.

<sup>30</sup> Beauchamp, T., & Childress, J. *Principles of Biomedical Ethics*, 7th Edition. (Oxford University Press Oxford 2013).

<sup>31</sup> Mantzarlis, A. 'Ethics of Digital Citizenship: Combating Online Health Misinformation' *Reuters Institute* 2020.

<sup>32</sup> Zollo, F., & Quattrociocchi, W. 'Misinformation Biases in Online Social Media' *PLOS One Journal* (2015) 10(8).

## 5. Policy Responses

### 5.1 Digital Literacy Programs

Education is central to combating misinformation. Digital literacy programs equip users with the skills to critically evaluate content, assess source credibility, and resist emotionally manipulative claims<sup>33</sup>. Schools, universities, and community campaigns can teach users how to identify false information, verify facts, and interpret scientific data.

For example, integrating digital literacy into school curricula has shown promise in increasing skepticism of false claims and promoting verification behaviors among adolescents.<sup>34</sup> Adult populations can benefit from public awareness campaigns emphasizing fact-checking strategies, especially during health crises. Digital literacy thus acts as both a preventive and corrective tool against the spread of misinformation.

### 5.2 Fact-Checking and Verification

Collaborations between governments, non-governmental organizations, and social media platforms have established fact-checking mechanisms.<sup>35</sup> Verified content, warning labels, and redirection to authoritative sources reduce the reach and perceived credibility of false claims.

Rapid identification of emerging false narratives is critical. During COVID-19, fact-checking organizations flagged false vaccine claims, circulating corrections through social media and mainstream media simultaneously.<sup>36</sup> Research demonstrates that timely corrections can reduce the persistence of false beliefs, though repeated exposure to misinformation may require continuous reinforcement.

### 5.3 Community Engagement

Interventions are more effective when culturally sensitive and locally tailored. Public health campaigns leveraging community leaders, religious authorities, and healthcare professionals ensure that corrective information reaches populations most vulnerable to misinformation.<sup>37</sup>

Community engagement also fosters trust, particularly in populations historically skeptical of government or medical authorities. Grassroots campaigns using local languages, culturally relevant messaging, and peer influencers have proven more successful than generic national campaigns.

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<sup>33</sup> Miller, J. M., & Krosnick, J. A. 'Information Inequality and Health Misinformation' *Public Opinion Quarterly* (2020) 84(1).

<sup>34</sup> Rheingold, H. *Net Smart: How to Thrive Online*. (MIT Press Cambridge (2012).

<sup>35</sup> FactCheck.org. 'COVID-19 Fact-Checking Initiatives and Social Media Partnerships' 2021.

<sup>36</sup> AFP Fact Check 'Tracking COVID-19 Vaccine Misinformation Online' 2021.

<sup>37</sup> van der Linden, S., et al. 'Inoculating the Public against Misinformation' *Journal of Risk Research* (2018) 21(3).

## 5.4 Legal and Regulatory Measures

Some jurisdictions have introduced laws holding platforms accountable for harmful misinformation, including fines, mandatory reporting, and transparency requirements.<sup>38</sup> Regulatory frameworks encourage the responsible moderation of content, algorithmic oversight, and public reporting.

For example, legislation may require platforms to maintain logs of flagged health misinformation, implement content moderation protocols, and provide public reporting on removal actions. Such measures balance freedom of expression with public health imperatives, signalling accountability to both users and regulators.<sup>39</sup>

## 5.5 Behavioural Interventions

Behavioural insights inform interventions such as nudges, reminders, and social norm messaging. Highlighting the proportion of vaccinated peers or emphasizing prosocial behaviors can increase compliance with health measures.<sup>40</sup>

Social cognitive theory supports these interventions by modeling desired behaviors through credible sources. Users observing positive health behaviors in trusted figures are more likely to emulate them. Behavioral nudges complement regulatory and educational strategies, reinforcing correct practices at the individual and community level.

## 6. Challenges in Implementation

### 6.1 Algorithmic Amplification

Social media algorithms prioritize engagement, often amplifying sensational content over factual accuracy.<sup>41</sup> Modifying algorithms requires platform accountability, transparency in design, and careful consideration of unintended consequences.

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<sup>38</sup> Australian Government 'Online Safety Act: Regulating Harmful Digital Content' (2021).

<sup>39</sup> Centre for Democracy & Technology 'Legal Frameworks for Health Misinformation' (2020).

<sup>40</sup> Milkman, K. L., et al. *Applying Behavioural Insights to COVID-19 Vaccination Programs*. (Harvard University Behavioural Insights Lab 2021).

<sup>41</sup> Tandoc, E. C., Lim, Z. W., & Ling, R., 'Defining 'Fake News': A Typology of Scholarly Definitions' *Digital Journalism* (2018) 6(2).

## 6.2 Rapid Evolution of Misinformation

False narratives adapt quickly to interventions, utilizing new memes, videos, or textual formats to evade detection.<sup>42</sup> Effective response requires continuous monitoring, agile content moderation, and adaptive messaging strategies.

## 6.3 Global Spread

Cross-border dissemination complicates regulatory enforcement. False claims originating in one country may influence behaviors globally, challenging legal and policy jurisdictions.<sup>43</sup> International collaboration and cross-platform monitoring are therefore essential.

## 6.4 Historical Mistrust

Communities with historically low trust in institutions may resist corrective messaging, limiting the efficacy of interventions.<sup>44</sup> Strategies must prioritize trust-building and culturally competent communication.

## 6.5 Resource Constraints

Comprehensive fact-checking, digital literacy campaigns, and monitoring require sustained funding, technical expertise, and inter-organizational coordination.<sup>45</sup> Resource limitations can reduce the scale and impact of interventions.

## 7. Implications for Public Trust

Public trust is a foundational element of effective health systems and is critical for the success of vaccination campaigns, preventive measures, and broader public health interventions<sup>46</sup>. When the public perceives health authorities, medical professionals, or information sources as unreliable, even accurate and evidence-based guidance may be disregarded. The spread of health misinformation on social media significantly undermines this trust, creating a cascade of negative outcomes that affect both individual behavior and collective health outcomes.<sup>47</sup>

Misinformation about COVID-19 vaccines, including false claims about safety, fertility effects, or conspiratorial motives, has led to widespread skepticism among certain populations. This erosion of trust manifests in increased vaccine hesitancy, refusal to follow public health guidance, and reliance on unverified alternative treatments. Trust deficits exacerbate public health

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<sup>42</sup> Pennycook, G., & Rand, D. G., 'Fighting COVID-19 Misinformation on Social Media' *Behavioral Science & Policy* (2020) 6(1).

<sup>43</sup> Newton, C. 'How Misinformation Crosses Borders, *The Verge* (2020).

<sup>44</sup> Larson, H. J., et al. *Vaccine Hesitancy: Understanding the Global Challenge* WHO (2015).

<sup>45</sup> UNESCO *Combating COVID-19 Misinformation: A Global Perspective* (2021).

<sup>46</sup> Brewer, N. T., et al. 'Public Trust and Vaccine Uptake' *Health Psychology* (2019) 38(5).

<sup>47</sup> Quinn, S. C., et al. 'Restoring Trust in Public Health during a Pandemic' *American Journal of Public Health*, (2020) 110(6).

challenges by delaying vaccination, reducing adherence to mask-wearing, social distancing, and testing protocols, and heightening the vulnerability of communities to subsequent outbreaks.

The implications extend beyond immediate health outcomes. Societal trust in government institutions, healthcare providers, and scientific expertise is weakened, creating a long-term challenge for public health policy. Communities with lower institutional trust may resist future interventions, not only for COVID-19 but also for other vaccination campaigns and public health initiatives. Mistrust can fuel polarization, with groups forming echo chambers that reinforce false narratives and amplify skepticism toward official guidance. This can further entrench misinformation, creating cycles of doubt and non-compliance.

Restoring public trust requires deliberate, multi-faceted strategies. Transparency in communication is essential; authorities must openly share information regarding vaccine development, safety monitoring, side effects, and decision-making processes. Consistent and clear messaging across different channels reduces confusion and counters contradictory narratives. Engagement with community concerns through local leaders, healthcare professionals, and culturally relevant outreach helps to bridge gaps in understanding and demonstrates respect for community perspectives.

Demonstrable accountability is equally critical. Public institutions and social media platforms must visibly act to identify, correct, and prevent the spread of misinformation. This includes ethical moderation, provision of verified content, and rapid response to emerging false narratives. By combining transparency, community engagement, and accountability, health authorities can rebuild confidence, reinforce the credibility of accurate information, and improve adherence to preventive behaviours. Without trust, even scientifically accurate messages may fail to influence behaviour, highlighting that public health communication is as much about credibility and relationship-building as it is about factual accuracy.

Ultimately, trust is not only a social or psychological construct but a public health necessity. It underpins compliance, enables coordinated responses to health crises, and ensures that interventions achieve their intended impact. The COVID-19 pandemic demonstrates that undermined trust can severely compromise health system effectiveness, emphasizing the need for proactive strategies to sustain and restore public confidence in health information and authorities.

## **8. Recommendations**

1. **Strengthen Digital Citizenship:** Promote responsible online engagement, verification habits, and ethical sharing practices.

2. **Enhance Platform Accountability:** Implement transparency in content moderation, algorithmic design, and enforcement.
3. **Community-Based Messaging:** Leverage local influencers and healthcare professionals for culturally sensitive health communication.
4. **Behavioural Nudges:** Utilize social proof, peer modelling, and reminders to encourage vaccination and preventive behaviours.
5. **Continuous Research:** Monitor misinformation trends, behavioural responses, and intervention efficacy to guide adaptive policy.
6. **Legislative Support:** Develop enforceable laws balancing free expression with public health imperatives, targeting harmful misinformation while protecting rights.

## 9. Conclusion

Health misinformation on social media presents substantial challenges to public health, behavioural compliance, and societal trust. The COVID-19 pandemic highlighted the consequences of unregulated, rapid dissemination of false information, particularly regarding vaccines. Addressing these challenges requires integrated approaches involving regulation, platform accountability, digital literacy, behavioural science, and community engagement. Fostering responsible digital citizenship and restoring public trust is essential to mitigating harmful effects and enhancing resilience in public health systems. Multi-stakeholder collaboration remains critical for ensuring social media contributes positively to health outcomes rather than undermining them.