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"NO ONE WANTS THAT 1 OUT OF A MILLION DEATH TO BE THEIR KID": A QUALITATIVE ANALYSIS OF PROTECTIVE INDIVIDUALISM, INSTITUTIONAL DISTRUST, AND THE SHIFTING EPISTEMOLOGY OF VACCINATION IN TODAY'S DIGITAL DISCOURSE

Stacey Kim, MS, Monideepa B. Becerra, DrPH, MPH

stacey.kim@my.rfums.org

Abstract:
Background: *The resurgence of vaccine-preventable diseases and declining trust in public health institutions in the United States have coincided with the rise of digital platforms that shape how individuals interpret vaccine-related information.*
Methods: *A qualitative thematic analysis was conducted using a sample of Reddit posts related to vaccine safety, vaccine mandates, and delayed vaccination from January to February 2026. Data was analyzed through a human-in-the-loop AI-assisted workflow with manual validation.*
Results: *Four themes emerged: declining institutional trust driven by profit narratives, tension between individual autonomy and collective responsibility, prioritization of personal experience over epidemiologic data, and algorithm-driven reshaping of authority. These themes reflected a broader shift toward protective individualism, fragmented epistemic trust, and the replacement of institutional expertise with digitally mediated personal authority.*
Conclusion: *Vaccine hesitancy in digital spaces reflects structural and cultural shifts, underscoring the urgent need for adaptive, trust-centered public health communication strategies that account for the rapidly evolving social media information landscape.*

Keywords: *Health literacy, Health communication, Vaccine hesitancy, vaccine compliance, Social media, Reddit.*

*Address correspondence to: Stacey Kim, MS. Rosalind Franklin University of Medicine and Science. 3333 Green Bay Road. North Chicago, IL 60064. Phone: 404-723-01613. Email: stacey.kim@my.rfums.org

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BACKGROUND

The last decade has seen a rise in vaccine-preventable morbidity and mortality, marked by increasingly disproportionate outcomes between the U.S. and its global peers. For example, while the World Health Organization (WHO) reported that global childhood immunization coverage stalled in the early 2020s (World Health Organization, 2026), the U.S. has moved beyond mere stagnation into an active reversal of public health gains. For example, the 2019 resurgence of measles reached a 25-year high and serves as a stark harbinger of this declining community immunity. A recent study comparing the U.S. to countries in the European Union and the Organisation for Economic Co-operation and Development (OECD) found that while avoidable mortality rates declined across most high-income nations from 2009 to 2019, they rose in every single U.S. state. This gap, which only intensified during the COVID-19 pandemic (Papanicolas et al., 2025). Compounded with recent polls (Kffrainl, 2026) indicating that trust in the Centers for Disease Control and Prevention's vaccination guidance stands at 47%, this domestic decline is uniquely severe and positions the U.S. as a distinct outlier among other industrialized nations.

As public health recommendations become more frequent and complex, the perception of these agencies as neutral, science-driven entities has been increasingly challenged. For example, Melchinger et al. (2025) found that between February 2020 and June 2022, confidence in all surveyed U.S. public health entities declined, with the Centers for Disease Control and Prevention experiencing a 26% decrease. Although some recovery occurred by 2024, trust in national institutions has not returned to pre-pandemic levels. Jennings & Gostin (2025) characterize this shift as a civic and cultural crisis where public health has entered a period of turmoil. They argue that a massive privatization maneuver has disrupted established institutions, leading to a loss of expertise that will be difficult to recover.

Further, while public health theory traditionally emphasizes herd immunity as a civic duty (Salmon & Omer, 2006), a growing trend toward medical individualism prioritizes the right of the household to conduct its own risk-benefit analysis, independent of community-level impacts. For example, Reich (2014) found that parents with high levels of social and economic capital often utilize a framework of neoliberal mothering to prioritize individual risk-benefit analysis over population health mandates. This approach treats vaccination as a personal consumer choice rather than a shared civic obligation. By emphasizing intensive parenting practices such as organic nutrition and natural lifestyles, some families view their personal health choices as a primary defense against disease.

Such tension is further complicated by the transition from traditional, top-down information dissemination to decentralized digital platforms, in turn not only changed what information people consume but also who is considered a credible source of truth (Cinelli et al., 2021; Flaxman et al., 2016). For instance, Kata (2012) observes that this shift has allowed anti-vaccination activists to leverage Web 2.0 technologies to spread persuasive rhetoric that questions the legitimacy of science and redefines expertise through the lens of personal experience. This shift is further characterized by a systematic review from (Ortiz-Sánchez et al. (2020), which notes that while pro-vaccination content exists, anti-vaccination groups are often more cohesive and active in disseminating narratives focused on pharmaceutical distrust and personal stories of harm.

Together, these studies highlight how social networks facilitate the prioritization of emotional and anecdotal proof over clinical data, creating highly polarized environments where traditional public health messaging struggles to compete with curated, skeptical worldviews. As such, there is a critical need to understand how these broader societal shifts and the rise of digital authority are articulated in informal, peer-to-peer environments. Understanding the nuances of these organic discussions is essential for developing communication strategies that can resonate in an era of fragmented trust.

METHODS

Data Collection

A purposive sampling method was utilized to collect data from Reddit to capture contemporary public discourse regarding vaccination. The collection occurred over three distinct phases between January 30 and February 3, 2026. To ensure the inclusion of timely and relevant discussions, searches were conducted using the Reddit native search tool using three specific key phrases: "vaccine safety" (January 30), "vaccine mandates" (February 1), and "delaying vaccinations" (February 3). To maintain the focus on the most recent discourse, the analysis was restricted to content published within one month of the evaluation date, ensuring the findings reflect the most current public sentiment.

The search queries were entered without quotation marks to allow for a broader range of related topics. To prioritize recent conversations, results were limited to the "Past Month" using Reddit's built-in time filters and sorted by "Relevance" (the platform's default). For each of the three search terms, the first 10 results were selected for analysis. Posts that appeared across multiple search queries were retained to reflect their prominence in the digital ecosystem. To ensure thematic consistency, each post was screened to confirm that the title contained the term "vaccine" or that the discussion occurred within a vaccine-specific subreddit. Once verified, the full webpages, including comments and upvote metadata, were preserved as PDFs and archived in a secure cloud-based directory.

Data Analysis

The analysis followed a multi-stage qualitative approach beginning on February 13, 2026, utilizing a human-in-the-loop AI-assisted workflow (Wiebe et al., 2025). Initial processing was conducted using the Gemini 3 Flash large language model (LLM), as a coding assistant to identify recurring thematic patterns and extract significant verbatim quotes from the data corpus. To ensure the integrity of the findings and mitigate the risk of generative hallucinations or data misinterpretation, a rigorous manual cross-referencing process was employed. Every AI-generated summary, theme, and excerpt was audited by the primary researcher against the original data archives to ensure contextual accuracy.

Following this initial coding phase, the findings were reviewed by the research team to ensure the thematic categories aligned with the study's research objectives and qualitative standards. The individual summaries from each search category were then synthesized into a comprehensive final analysis. This collaborative process involved a final round of double-checking by researchers to verify the overarching trends and ensure the representativeness of the selected qualitative data. This study is designated at non-human subject research by the Institutional Review Board.

RESULTS

The qualitative analysis of Reddit discussions led to the identification of four emergent themes: shifting trust in institutions and the profit narrative, the tension between individual autonomy and collective responsibility, the primacy of personal experience over epidemiological data, and the role of algorithmic influence in reshaping authority.

Shifting Trust in Institutions and the Profit Narrative

A prominent thread across the analyzed discourse was a fundamental breakdown in trust toward the establishment. This manifested primarily as skepticism regarding the motives of organizations such as the CDC and the pharmaceutical industry, often referred to collectively by users as "*Big Pharma*." For example, many users viewed medical recommendations as a revenue strategy rather than a public health necessity, framing the patient as a consumer and the cure as a source of profit.

One user captured this sentiment by stating, *"I believe that the goal of pharmaceutical and vaccine companies is not to prevent or eliminate diseases but rather to ensure the existence of illnesses so they can profit from them."*

Extending this skepticism even further, another user showed distrust of the entire government, asserting that *"the government hides actual cures to keep people sick so that the health care industry can make money."*

Beyond financial skepticism, a hijacked narrative emerged, suggesting that scientific agencies have been co-opted for political purposes. Users expressed a shared fear that public health is no longer an evolving science but rather a vehicle for politically manipulated messaging. Anticipating future policy shifts, some users began to archive prior recommendations: *"I took screenshots of all the recommendations last January bc [because] I just had a feeling this was coming".*

While clinicians in professional subreddits emphasized adherence to independent standards like the American Academy of Pediatrics to protect professional integrity, as highlighted by a pediatrician noting, *"For me, business as usual. I take my guidelines from the AAP and I will still be recommending these vaccines. We'll have to re-evaluate a bit if insurance stops covering routinely,"* perceptions among members remained varied.

For instance, while some comments continue to state their trust established non-federal medical agencies, as exemplified by a commenter noting that *"Some representatives from the AAP have already said they will continue recommending all vaccines regardless of what [redacted] does. I trust the American Academy of Pediatrics to continue making recommendations based on science,"* others who remain skeptical of vaccines often viewed this very adherence as evidence of "brainwashing;" as one user noted: *"I'm thankful to have unhooked myself from the whole vaccine brainwashing."*

Individual Autonomy vs. Collective Responsibility

Within the digital discussions analyzed, the appeal to individual autonomy surfaced as a primary justification for vaccination decisions. For instance, proponents of autonomy argued that medical choices should be made at the household level, frequently dismissing the impact on the broader community as a secondary concern. This protective individualism was driven by a specific perception of risk; even minimal statistical risks were treated as unacceptable when applied to one's own child as seen by an user's comment: *"No one wants that 1 out of a million death to be their kid...You can call that a small risk, but you can't say it's not a real risk."*

Conversely, public health advocates emphasized that individual choices create ripple effects that weaken the safety net for the entire population highlighting that *"FWIW* [for what it's worth] *herd immunity is very important...the true way to prevent disease is to have a majority of the population vaccinated and provide herd immunity to all of society."*

Personal Experience Over Data

Several users prioritized personal observation over epidemiologic data. Because vaccination programs have been highly effective in reducing or eliminating once-common childhood diseases, the absence of illness is now seen as the baseline rather than the result of sustained successful public health intervention. This is what can be defined as the invisibility of success. Further, users also noted that modern generations no longer have lived memory of the *"horrors associated with polio, whooping cough, rubella, etc."* Without direct exposure to these diseases, the threat they pose becomes abstract. People see that those who survived the diseases, and the vast number who died, become an afterthought. As one commentator explained,

"*Vaccines work so well that the average person never sees the need."*

As such, without the visibility of diseases or first-hand experience, the severity of the disease becomes abstract. In contrast, adverse reactions of vaccinations are still seen. One user stated, "*Nothing on a website is going to convince me of something I haven't witnessed at all in real life,*" noting that personal observation now has become the benchmark for credibility.

Algorithm Influence and Changing Sources of Authority

Among the analyzed posts, there was evidence of a broader transformation in how information is encountered and who (or what) is considered a credible source as well. Social media has become a source of news for the majority of users, especially those on Reddit. Social media algorithms are trained by the user's activity to reinforce existing beliefs over time. Users are not necessarily deliberately seeking misinformation but rather they are training their online environment to provide content they are interested in or agree with. As one user explained, people who are susceptible to conspiracy thinking can "*essentially train their algorithm to feed them conspiracy theories.*"

Rather than relying on traditional scientific institutions, some users have started to look to online personalities for information. One commenter noted, "*Now they listen to whatever Instagram influencer with no medical background says.*"

DISCUSSION

This study employed a qualitative thematic analysis to evaluate contemporary vaccine discourse on Reddit. Results highlight how institutional distrust, protective individualism, the prioritization of personal experience over epidemiological data, and the growing influence of algorithms construct vaccine-related beliefs in a digital environment. These themes illustrate a complex landscape where traditional scientific guidance is increasingly contested by lived experience and digital curation.

For example, our results illustrate a fundamental breakdown in trust toward the medical establishment, where users frequently frame public health recommendations as revenue strategies rather than medical necessities. This reflects a broader scholarly conversation regarding pharmaceutical capture, a term used by Vertinsky (2021) to describe the systemic influence corporate actors can exert over the very markets and regulations intended to oversee them. Particularly, Vertinsky developed a framework for pharmaceutical capture, examining how powerful corporate actors exert systemic control over the design and regulation of healthcare markets to prioritize profit over public health objectives. The author found that this influence is a structural feature of U.S. pharmaceutical markets where industry actors successfully advocate for deregulation or favorable regulatory redesigns, effectively substituting public interest governance with structures that serve incumbent corporate interests. This aligns with our results by providing a structural explanation for the distrust of scientific institutions observed. In turn, this can further make the public feel justified in losing their trust in the establishment and turning toward alternative, albeit algorithmically fragmented, sources of authority.

Furthermore, the practice of archiving and screenshotting prior recommendations suggests that the public is increasingly sensitive to epistemic corruption, or the perceived loss of integrity in how scientific knowledge is produced and disseminated (Sismondo, 2021). As further seen in our results, when users interpret evolving guidelines as evidence of manipulation rather than scientific progress, they are operating within a postmodern paradigm where the legitimacy of traditional expertise is no longer a given. This further reflects the postmodern paradigm described by Kata (2012), where the validity of science is constantly questioned. In this landscape, the adherence to professional standards by clinicians is reframed by skeptical users as evidence of *"brainwashing*," as seen in our results. This delegitimization of official expertise creates a vacuum of authority, and as as traditional scientific institutions are seen as politically or economically compromised, the U.S. continues to emerge an outlier in global health outcomes.

Our results also illustrate a shift in the conceptualization of health where the household has replaced the community as the primary unit of risk analysis. This focus on personal risk control, encapsulated by the sentiment that a one in a million risk is unacceptable when applied to one's own child, reflects a conflict between benevolence and universalism. As noted by Chou et al. (2025) while both are prosocial values, public health communication often falters when these are misaligned. A perceived threat to the immediate family can cause benevolence, or in-group protection to override universalist commitments to the public good. Consequently, for users prioritizing autonomy, vaccination is transformed from a civic contribution into a voluntary consumer choice. This transition aligns with the description of neoliberal mothering by Reich (2014) where safeguarding one's personal gated community takes precedence over maintaining the social safety net of herd immunity.

Furthermore, the practice of families restricting contact with the unvaccinated suggests that communal accountability has migrated from the state to the social circle. This is supported by Attwell et al. (2018) who utilized the concepts of capitals and habitus to explain how parents join epistemic communities. In these spaces, non-vaccination is a valued form of symbolic capital used to maintain group identity through shared norms and values. This aligns with our findings by demonstrating how vaccination behaviors are not solely based on the individual's health decision but also on social ecosystems where non-vaccination is actively maintained and supported rather than governed by broader public health expectations.

This tension felt by users who describe themselves as *"unhooking from brainwashing"* may reflect the experience of hesitant adopters as defined by Willis et al. (2023). Such individuals' behaviors are considered to be shaped by social processes or workplace requirements that in turn conflict with their internal skepticism. In describing this pattern, the authors found that both vaccine hesitancy and compliance frequently coexist, with societal pressures often driving the latter despite distrust. Such findings suggest that public health norms are increasingly enforced through private social boundaries when they are not upheld by formal policy. This aligns with our results that compliance may reflect external pressures rather than genuine trust in our public health institutions.

Ultimately, these responses demonstrate that vaccination is viewed as a cooperative act only within a narrow and personally relevant group rather than a broad national obligation. As Rabb et al. (2022) demonstrate, the influence of social norms is strongest among close ties such as family and friends and weakens significantly as the reference group expands to the abstract city or state. This contraction of the public in public health explains why economic arguments regarding the downstream costs of under-vaccination often fail to resonate with autonomy-focused users. When the household is the only unit of analysis that matters, the burden on the broader healthcare system is viewed as an auxiliary concern. Consequently, the U.S. continues to struggle with a civic desert (Atwell et al., 2017) where the breakdown of shared responsibility prevents the translation of health spending into the collective survival gains seen in peer nations.

Our results on the preference for personal experience over epidemiologic data also note that as vaccination programs successfully eliminate the visible threat of disease, the absence of illness is increasingly perceived as the natural baseline rather than a public health achievement. This reflects the paradox where the very success of public

health measures makes them invisible to the public while the rare occurrence of an adverse event remains highly visible (Raza et al., 2018).

Given vaccination supporting information generally highlights the non-occurrence of an outcome, it is often psychologically underweighted compared to vaccination critical information that links an action to a specific and observable harm (Vandeberg et al., 2024). For instance, Vanderberg and group sought to examine how the feature positive effect influences how individuals process vaccination information, especially in the presence or absence of visual health outcomes. They found that individuals have greater difficulty in processing and recalling non-occurring events compared to more observable outcomes like adverse effects, leading to bias in risk perception. This aligns with our findings, where users consistently preferred personal anecdotes of harm over epidemiological data. As direct lived memory of the mortality associated with diseases like polio or pertussis fades, the threat they pose becomes abstract, leaving a vacuum often filled by more resonant personal narratives.

This shift in risk calculation is driven by the availability heuristic, a System 1 cognitive shortcut where individuals evaluate risk based on intuitive judgments and easily recalled examples rather than statistical reasoning (Atad, 2025). As noted by the author, parents who hold consistent pro- or anti-vaccination stances tend to rely more heavily on this heuristic processing, using peripheral cues and memorable stories to confirm their existing intentions. When clinical data is viewed as abstract or invisible, these emotionally charged and easily retrieved narratives of vaccine side effects function as more persuasive proof than epidemiologic data. Parents may conclude that if their child remains healthy without an intervention, the intervention was unnecessary. This phenomenon, commonly referred to as Paradox of Prevention (Raza et al., 2018), overlooks the protective effect of herd immunity, which effectively becomes a victim of its own success. By maintaining a safe community, it inadvertently validates the decision to opt out. Ultimately, these results demonstrate that personal observation has replaced clinical data as the benchmark for credibility in digital health discussions. In turn, this divergence highlights a critical vulnerability in public health communication where the invisibility of prevention measures allows anecdotal evidence to redefine the perception of risk.

Our results on algorithm influence and changing sources of authority note a fundamental transformation in how health information is encountered and verified. In the current digital landscape, the traditional gatekeeping role of scientific institutions is being bypassed by algorithmic recommendation systems that are optimized for engagement rather than accuracy. This contributes to the formation of epistemic fragmentation, where individuals are disproportionately exposed to information that aligns with preexisting beliefs, eroding the shared standards used to judge what is true (Burden, 2026). As users essentially train their online environment to reinforce existing skepticism, they create self-reinforcing epistemic enclaves.

Furthermore, the migration of authority from medical professionals to online personalities is driven by the perceived authenticity of the influencer. Unlike traditional authorities who rely on formal credentials, wellness influencers often package their content with themes of natural living and freedom from the system. This lack of professional credentials is often treated as a source of authority itself, allowing influencers to position themselves as relatable and uncorrupted by mainstream medical institutions (O'Brien et al., 2024). Participation in these alternative communities also provides a psychological sense of insider knowledge. This reflects a broader trend where individuals find solace in hidden orders or secret plans to impose structure on uncertainty, a mindset that thrives when trust in traditional institutions weakens (Burdge, 2025).

Cumulatively, these responses demonstrate a state of epistemic instability where the influencer becomes the primary translator of science. For users in these digital environments, the performative intimacy of the influencer builds a level of trust that scientific integrity alone cannot match. This results in a landscape where medical professionals are not just competing with misinformation but are competing with an entire socio-technical system designed to prioritize the familiar and the emotionally resonant over the scientifically rigorous.

Limitations and Strengths

The results of this study should be interpreted in the context of limitations inherent to the study design. While Reddit is a significant hub for public discourse, its user base is not representative of the general population, often skewing younger and more technologically adept. Consequently, the themes identified here reflect the digital articulations of vaccine hesitancy rather than a universal national sentiment. Additionally, the reliance on public-facing posts and comments excludes private discussions that may occur in locked communities or direct messages, potentially underrepresenting the most extreme or coordinated forms of organized skepticism.

Notwithstanding such limitations, the study also has several strengths, including in its capacity to capture organic, peer-to-peer discourse in a naturalistic digital environment where users often feel more comfortable expressing skepticism than they would in a clinical or survey-based setting. By utilizing a human-in-the-loop AI-assisted workflow, this research was able to rapidly synthesize a large volume of qualitative data while maintaining the rigorous oversight necessary to prevent generative hallucinations. This methodology allowed for the identification of nuanced themes, such as the practice of archiving prior recommendations, which might be overlooked in traditional quantitative sentiment analysis. Furthermore, the use of purposive sampling from Reddit provided a cross-section of diverse subreddits, capturing both the defensive posture of clinicians and the high-intensity skepticism of those who describe their departure from institutional guidance as a form of intellectual liberation.

CONCLUSION

This study highlights that digital platforms have fundamentally reshaped vaccination discourse in the U.S. Skepticism is no longer a byproduct of information gaps, but a result of structural distrust, individualized risk-assessment, and algorithmic reinforcement. Our findings reveal a landscape where personal anecdotes and social identity frequently override statistical evidence, rendering traditional top-down messaging ineffective. Consequently, public health strategies must evolve beyond simple fact-correction. Given digital credibility is now rooted in relatability and perceived independence rather than formal licensure, institutions must adapt to how risk is interpreted within specific online ecosystems. Moving forward, addressing hesitancy requires more than restoring institutional trust and necessitates active engagement with the technological environments that define how that trust is built and sustained.

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