

The Resurgence of Vaccine Hesitancy and Cultural Mistrust in the 21st Century

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Abstract

The World Health Organization listed vaccine reluctance as one of the top 10 threats to world health. In the twenty-first century, vaccine hesitancy has become a major public health concern. This phenomenon, which is typified by delayed acceptance or denial of vaccines despite the availability of services, is caused by a complex interaction of past grievances, cultural mistrust, misinformation and current sociopolitical factors. These tendencies were greatly intensified by the COVID-19 pandemic, which increased anti-vaccine messages on social media and undermined public trust in medical establishments. Through a thorough analysis of contemporary literature (2018–2025), this research investigates the comeback of vaccine hesitancy and cultural mistrust, examining epidemiological patterns such as the 2025 U.S. measles outbreak and ongoing polio transmission in Pakistan. The results show that vaccine reluctance is not uniform but rather is influenced by context-specific elements such as religious convictions, past medical injustices, socioeconomic inequality and geopolitical conflicts. Rather than being the result of ignorance, cultural mistrust, especially among marginalized people, is a logical reaction to real-life experiences of institutional injustice. The consequences for nursing highlight the profession's special ability to deal with reluctance through compassionate communication, community involvement and education that is culturally sensitive. Evidence-based solutions include institutional changes to restore trust, focused communication tactics and cooperative relationships with religious and community leaders. In order to address this complex issue, structural empathy and equity-centered public health practice must be used in addition to biomedical measures.

Keywords: Vaccination Confidence, Nurse Interventions, Health Communication, Cultural Distrust, Vaccine Reluctance, Public Health

Introduction

A paradoxical public health problem has emerged in the twenty-first century vaccination rates are falling and vaccine-preventable illnesses are on the rise, despite previously unheard-of scientific progress in vaccine production. In 2019, the World Health Organization (WHO) identified vaccine hesitancy as one of the ten most urgent dangers to global health. This assessment turned out to be prophetic as the COVID-19 epidemic increased anti-vaccine views across the globe (WHO, 2019). Over 150 million lives have been saved by vaccinations over the past 50 years, yet in 2021 alone, almost 18.2 million children did not receive the diphtheria, tetanus, and pertussis vaccine (UNICEF, 2023). The resurgence of illnesses that were previously thought to be under control, such as measles outbreaks in the US and Europe and the ongoing endemic transmission of polio in Pakistan and Afghanistan, has been made possible by this drop in vaccination rates (Adeoye et al., 2025; Ahmad et al., 2023).

Delays, skepticism, and selective vaccination are all examples of vaccine hesitation, which ranges from total acceptance to open rejection. (MacDonald, 2015) Its rise cannot be ascribed to a single reason rather, it is the result of a confluence of variables, such as pervasive false information on social media,

cultural mistrust from the past and present, religious concerns and a decline in faith in governance and health systems (Ali, 2025; Larson et al., 2022) In particular, cultural distrust stems from conceptions of vaccination programs as tools of foreign agendas, past experiences of medical exploitation, and colonial legacies (Ali, 2025; Williams et al., 2025)

Nursing practice requires an understanding of the rise of vaccination reluctance and cultural distrust. Nurses have a key role in resolving vaccination concerns, fostering vaccine confidence, and promoting fair immunization access since they are the most trusted health profession (Perkins, 2026) This study looks at the factors that influence vaccination reluctance, evaluates current epidemiology data, investigates nursing implications and treatments, and highlights shortcomings in existing methods. This research seeks to enrich evidence-based nursing practice that tackles systemic obstacles to immunization as well as individual concerns by placing vaccine hesitancy within larger social, historical, and political contexts.

Literature Review

Defining Vaccine Hesitancy

Vaccine hesitation is defined as "a delay in acceptance or refusal of vaccines despite the availability of vaccine services" by the Strategic Advisory Group of Experts on Immunization (SAGE). (Macdonald, 2025, p.4163). This concept recognizes reluctance as a behavioral phenomenon that exists on a spectrum impacted by psychological, environmental and socio-demographic variables and is different from outright refusal (Butler & MacDonald, 2016) The five factors influencing vaccination decisions are confidence, complacency, convenience, communication and context, according to the WHO's 5C model (Betsch et al., 2018). This approach acknowledges that vaccination decisions result from intricate relationships between personal convictions, social networks, elements of the health system and larger sociopolitical contexts. According to research, between 20% and 40% of parents in the US are hesitant to receive certain vaccines, with notable differences between localities and vaccination kinds. (Kempe et al., 2020) The phenomena is rarely consistent concerns are frequently unique to individual illnesses or formulations and reluctance against one vaccination may not anticipate reluctance toward another (Dube et al., 2021) Developing focused treatments requires an understanding of this variability.

Drivers of Vaccine Hesitancy

Misinformation of social media: In the twenty-first century, vaccination hesitancy has been mostly caused by anti-vaccine marketing on social media. (Wilson & Wiysonge, 2020). Even though a large portion of this information comes from people who have no training in healthcare, algorithm-driven echo chambers allow it to reach large audiences. By fostering divisive settings where anti-vaccine messages quickly proliferate and solidify, social media platforms reinforce false information (Broniatowski et al., 2018). Despite being completely refuted, the 1998 research that mistakenly connected the MMR vaccine to autism still has an impact on vaccination attitudes decade's later (Wakefield et al., 1998; Taylor et al., 2020). Social media enabled the quick spread of conspiracy theories during the COVID-19 pandemic that linked vaccinations to sterilization, infertility and other negative effects, which increased vaccine reluctance worldwide (Roozenbeek et al., 2020; Varshoei, 2026).

Religious and cultural factors: Vaccine acceptability is heavily influenced by cultural norms and religious beliefs. Some cultures have religious concerns about vaccination ingredients such porcine gelatin. Despite the support of several religious authorities, there has been opposition in Pakistan due to rumours that polio vaccinations contain haram (forbidden) chemicals or induce infertility. According to a nationwide poll, just 44.6% of Pakistani Muslim academics were ready to openly advocate for polio vaccination, despite the fact that 68.4% of them supported it (Ahmad et al., 2023) Cultural norms have an impact on vaccination choices as well. Resistance to HPV vaccination programs for teenage

females in Pakistan is associated with moral concerns about modesty and sexuality (Tiwana et al., 2026). Parents from minority ethnic groups have also voiced concerns over the components in vaccines and questioned the need for immunizations for illnesses that are not thought to pose an urgent threat (Singer et al., 2023).

Historical Mistrust and Medical Injustice

Medical exploitation and institutional prejudice in the past are common causes of cultural distrust of healthcare facilities (Williamson et al., 2024). Vaccination programs may be properly distrusted by communities that have been subjected to forceful medical procedures, unethical research or neglect by health institutions. Memories of the CIA's employment of a mock vaccination campaign, which validated concerns that health initiatives may further geopolitical objectives are entwined with opposition to polio vaccination in Pakistan (Ali, 2025). As Ali, (2025). Argues, The historical grievances that influence community reactions to health initiatives are ignored when such worries are written off as "ignorance".

Socioeconomic and Structural Barriers

Access to vaccines is hampered by poverty, low health literacy, and poor infrastructure, which exacerbate reluctance (Bazan et al., 2025). Families in poverty in South Asia could put their immediate survival requirements ahead of vaccinations and those with less education might not have accurate knowledge about the advantages of vaccines (Ahmad et al., 2025). Transportation expenses, which often range from \$15 to \$50 each vaccine appointment, are major financial barriers in remote areas. Marginalized people are disproportionately affected by structural impediments such as difficult clinic locations, identification procedures and fragmented health systems (Tiwana et al., 2026).

Geopolitical and governance factors: Vaccination programs are directly impacted by geopolitical conflicts and government shortcomings. Hundreds of thousands of children in Pakistan have not received their vaccinations due to campaign disruptions caused by militancy, instability along the Afghan border and targeted attacks on medical personnel (Ahmed et al., 2023). Such attacks have claimed the lives of over 200 security and polio workers, fostering a climate of terror that hinders program execution Public trust is further eroded by governance problems such as top-down tactics, irregular communication and a lack of community involvement (Ali, 2025).

Covid-19 Pandemic as an Amplifier

The COVID-19 pandemic greatly increased vaccination reluctance in a number of ways. Lockdowns interfered with regular immunization programs, resulting in immunity gaps that allowed vaccine-preventable illnesses to resurface (Shet et al., 2023). Despite being a technological marvel, the quick creation of COVID-19 vaccinations increased public doubts about their efficacy and safety (Dizanamirira et al., 2021). During the pandemic, anti-vaccine groups gained traction as social media amplified worries about all vaccinations, not only COVID-19 (Johnson et al., 2023).

Following the pandemic, there was a significant increase in parental vaccination hesitation, with studies revealing higher rates of worry over kid immunizations (Lee et al., 2024). After a 15-month break, polio infections in Pakistan resumed due to pandemic-related interruptions to efforts (Ahmad et al., 2023). The pandemic exposed and exacerbated vaccine disparities worldwide, with low-income nations having both lower vaccination rates and limited availability to vaccinations (Hotez, 2022).

Epidemiological Analysis

Global patterns of Vaccine-Preventable Disease Resurgence

Measurable epidemiological effects have resulted from the return of vaccination reluctance. Over 14 million babies worldwide were not vaccinated in 2024 and there have been widespread outbreaks of measles, pertussis and other illnesses that may be prevented by vaccination (UNICEF, 2025). MMR

vaccination coverage in the UK dropped to 88.9% in 2023–2024, falling short of the 95% cutoff needed for herd immunity (UK Health security Agency, 2024). This decrease was consistent with a ten-year trend of declining children immunization rates (O'Brein et al., 2023).

Efforts to eradicate polio in Pakistan continue to encounter significant obstacles. Six of the seven cases of wild poliovirus type 1 (WPV1) documented worldwide as of Week 9 of 2025 were from Pakistan, while 112 of the 121 environmental samples that tested positive for the virus came from Pakistan. During anti-polio campaigns in 2024, over 200 boycotts were reported in Khyber Pakhtunkhwa region and over 420,000 children remained unvaccinated. Environmental tests from 27 districts have shown the virus, suggesting broad silent transmission in both rural and urban regions (Pakistan Polio Eradication Program, 2025).

The 2025 U.S Measles Outbreak

A clear example of the repercussions of vaccination reluctance is the measles epidemic in the United States in 2025. The first measles fatalities in the US since 2015 were among the 1,088 confirmed cases recorded by the Centers for Disease Control and Prevention in 33 jurisdictions by May 2025 (Adeoye et al., 2025). More than 90% of patients were unvaccinated or had unknown vaccination status and nearly all cases were linked to under-vaccinated communities in Texas, New Mexico and Oklahoma (Adeoye et al., 2025). Between 2019–2020 and 2023–2024, kindergarten MMR coverage decreased from 95.2% to 92.7%, leaving almost 280,000 children at risk (Seither et al., 2024).

According to the demographic profile of the outbreak, 34% of cases were children under five, 11% necessitated hospitalization and 18% involved newborns under a year of age (Adeoye et al., 2025). Two toddlers and one immune-compromised adult were among the three measles-related deaths. This outbreak confirms that measles containment is unstable whenever vaccination fails, as seen by recent global experiences such as the 2018 U.K. comeback and the 2019 Samoa pandemic. (Mankad & Jit, 2021; Earnshaw et al., 2020)

Socio-Demographic Patterns of Under-Vaccination

Under-vaccination clusters in certain populations are regularly shown by epidemiological data to be caused by intersecting causes. 87% of cases in the 2025 U.S. measles outbreak were found in states with kindergarten MMR coverage below 92%, while no state with coverage above 96% reported more than five cases (Adeoye et al., 2025) Compared to the white British population, children born to mothers from a number of minority ethnic groups in the UK have lower immunization rates for all childhood vaccinations (Singer et al., 2020). In Pakistan's polio-endemic regions that border Afghanistan, where vaccine resistance is greatest, poverty, illiteracy, and ignorance are common (Ahmad et al., 2025).

These trends highlight the fact that vaccination hesitancy is not randomly distributed but rather reflects systemic injustices and unequal access to social capital, healthcare and trustworthy information (Tiwana et al., 2026) Recognizing and addressing these socio-demographic factors is necessary to address poor vaccination rates.

Methodology

This academic study synthesized current data on vaccination reluctance and cultural distrust using a narrative review style. A thorough search for peer-reviewed publications published between 2018 and 2025 was carried out using PubMed, Scopus, Google Scholar, and institutional databases. Combinations of "vaccine hesitancy," "cultural mistrust," "vaccine confidence," "immunization barriers," "health communication," "nursing interventions," "polio," "measles outbreak," and "COVID-19 vaccine hesitancy" were among the search phrases." Peer-reviewed studies, systematic reviews, epidemiological reports, and reputable organizational publications that addressed the causes, effects, or treatments associated with vaccination hesitancy were all included in the inclusion criteria. Non-

English publications, editorials without data, duplicate papers, and research that were solely concerned with COVID-19 vaccination and had no bearing on more general immunization settings were among the exclusion criteria. Twenty-five pertinent papers and reports were found through the search; they were complemented by publications from national immunization programs, the CDC, and the WHO. To find important factors influencing vaccination reluctance, epidemiological trends, and evidence-based nursing treatments, thematic analysis was carried out. Articles from peer-reviewed journals with strong methodology were given priority in quality evaluation. By methodically recording search techniques and using a variety of sources, this review tackles the drawbacks of narrative synthesis, such as possible selection bias.

Nursing Applications and Interventions

Because nurses are the most trusted health profession, they are in a unique position to address vaccination reluctance (Perkins, 2026). A higher chance of vaccination acceptance is linked to vaccine confidence, which is defined as faith in vaccines, medical professionals, organizations and processes (Larson et al., 2022). Developing therapeutic connections marked by empathy, non-judgment, and active listening is essential to boosting confidence. When nurses address concerns without discounting them, they can successfully lower reluctance through outreach and education. Instead of giving general information, effective communication is asking open-ended questions to understand particular problems. "What has your experience been with vaccinations?" is one suggested inquiry. "Can you tell me about your reasons for choosing not to vaccinate?" in addition to "What are your fears related to vaccination?" This patient-centered approach allows for polite discussion and recognizes the reason for worries, even if they are not supported by science (Perkins, 2026).

Instead of providing general information, effective communication entails posing open-ended enquiries to comprehend particular issues. "What has your experience been with vaccinations?" is one suggested inquiry. "Can you tell me about your reasons for choosing not to vaccinate?", in addition to "What are your fears related to vaccination?" (Perkins, 2026). This patient-centered approach allows for polite discussion and recognizes the reason for worries, even if they are not supported by science.

Culturally Tailored Communication

In order to overcome vaccination hesitancy in different cultures, culturally appropriate communication tactics are crucial. Age, language, reading proficiency and health literacy should all be taken into account in educational materials. Avoiding medical jargon promotes comprehension, whereas visual aids and straightforward language lessen misunderstanding. Target population-specific messaging is necessary for instance parent-focused HPV vaccination education should priorities cancer prevention (Tiwana et al., 2026).

To foster confidence, nurses must also be open and honest about the advantages and hazards of vaccines, including any possible side effects (Perkins, 2026). How, where and when to get vaccinated should all be covered. Reaching communities where religious and community leaders have power requires engagement with them (Ahmed et al., 2023). Vaccination became a moral and religious obligation in Pakistan when religious experts participated in polio campaigns, overcoming opposition (Ahmed et al., 2023). Similarly, top-down messaging has been found to be less successful than including mothers and community elders in HPV vaccination communication (Tiwana et al., 2026).

Community Engagement and Outreach

Improving immunization rates, especially in underprivileged communities, requires community participation (Tiwana et al., 2026). In order to comprehend historical context and provide services that have an impact, nurses are well-positioned to work with communities through parent groups, religious meetings, and local events (Williams et al., 2025). Longer appointment times, after-school clinics, and mobile immunization programs make access easier for families with transportation and time constraints (Bazán et al., 2025).

Parents respected the opinions of nurses and desired more time to ask questions regarding vaccinations, according to research conducted in the UK with Somali and Bangladeshi groups (Singer et al., 2022). According to Singer et al. (2022), nurses reported a desire to interact with communities more, but they needed more resources, training, and time. Improving uptake requires helping nurses provide community-based care (Nursing Times, 2025).

Digital Literacy and Misinformation Countering

By encouraging digital literacy and pointing patients toward trustworthy sources, nurses may assist in combating false information (Wilson & Wiysonge, 2020). This entails teaching families how to assess health information found online and acknowledging that anti-vaccine propaganda frequently originates from individuals without medical expertise (Broniatowski et al., 2018). Nurses must assist patients in navigating the dangers of false information on social media, even as technology can increase vaccine uptake through SMS reminders and computerized registries (Varshoei, 2026).

Addressing Structural Barriers

In order to remove structural obstacles to immunization, nurses must also push for systemic changes. According to Bazán et al. (2025), this entails promoting equal policies, flexible hours, and accessible clinics. Given that lived experiences of health disparities are frequently reflected in cultural distrust, nurse advocacy should address the underlying reasons of mistrust rather than only offering assurance (Ali, 2025). According to Tiwana et al. (2026), this entails supporting peer-led and community-led solutions that are frequently underfunded or left out of established health systems.

Limitations

1. The majority of the research included in this review is from Pakistan, the US and the UK, which may restrict the findings' applicability to other areas with distinct social, cultural and medical settings.
2. Although it enables thorough synthesis, the narrative review technique is prone to selection bias and does not support meta-analytic findings. More standardized evaluations of the quality of the evidence may result from systematic or scoping review designs.
3. Evidence on new trends, especially post-pandemic patterns, is always changing, and vaccine reluctance is a dynamic phenomenon. As new evidence becomes available, certain conclusions might need to be updated.
4. The majority of the literature prioritizes individual factors that influence reluctance over systemic and structural analysis. Future studies should focus on equity-oriented methods that look at how social variables, policy and governance affect vaccination uptake and access.

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