



Vaccine Hesitancy in Sri Lanka: Epidemiological Trends, Determinants, and Policy Implications

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Abstract

Vaccine hesitancy has emerged as a growing global concern, threatening the sustainability of national immunization programs. Sri Lanka has historically maintained high vaccination coverage through a strong public health system and a well-established Expanded Program on Immunization (EPI). However, emerging evidence suggests increasing pockets of vaccine hesitancy, driven by misinformation, sociocultural factors, and changing risk perceptions. This article examines vaccine hesitancy in Sri Lanka from an epidemiological and health systems perspective. It analyses national trends, explores key determinants within the local context, and discusses implications for immunization policy and program delivery. Strengthening public trust, improving risk communication, and adapting immunization strategies to evolving societal dynamics are essential to sustaining Sri Lanka's achievements in vaccine-preventable disease control.

Keywords: Vaccine, Hesitancy, Sri Lanka, Immunization, Public health

Introduction

The World Health Organization defines vaccine hesitancy as a “delay in acceptance or refusal of vaccines despite availability of vaccination services” [1]. This phenomenon exists along a continuum, with individuals variably accepting, delaying, or selectively refusing vaccines [2]. Vaccine hesitancy is dynamic and context-specific, influenced by social, cultural, political, and behavioral factors [3].

Sri Lanka is widely recognized for its strong public health achievements. Since the establishment of the national EPI in 1978, the country has consistently achieved over 95% coverage for most childhood vaccines, contributing to the elimination of poliomyelitis (1993), maternal and neonatal tetanus, and measles [10–12]. These successes are attributed to a robust primary healthcare network, including

Medical Officers of Health (MOH), Public Health Midwives (PHMs), and Public Health Inspectors (PHIs).

However, recent global and local developments—including the COVID-19 pandemic, rapid expansion of digital media, and evolving societal attitudes—have contributed to emerging vaccine hesitancy. While overall national coverage remains high, localized declines and delays in vaccination uptake have been reported, raising concerns about the potential erosion of herd immunity.

Epidemiological Context of Immunization in Sri Lanka:

Sri Lanka maintains one of the highest immunization coverage rates in the region. Recent estimates indicate:

- DTP3 coverage exceeding 97%
- Measles-containing vaccine coverage approaching 99%
- Polio vaccination coverage consistently above 98% [10,11,15]

The country also reports near-complete surveillance coverage and high reporting completeness, reflecting a strong monitoring system [12].

Despite these achievements, the epidemiological landscape is changing. Sporadic outbreaks of measles and rubella in the past decade have highlighted vulnerabilities associated with immunity gaps. These gaps may arise not only from access issues but increasingly from vaccine hesitancy and delayed acceptance.

The success of immunization program has paradoxically reduced public perception of disease risk. As vaccine-preventable diseases become less visible, the perceived necessity of vaccination declines—a phenomenon increasingly observed in middle-income countries with high coverage rates.

Conceptualizing Vaccine Hesitancy: Beyond the “3 Cs”

The “3 Cs” model—confidence, complacency, and convenience—remains a useful framework [4]. However, in the Sri Lankan context, additional dimensions warrant consideration.

Confidence and Institutional Trust

Sri Lanka’s immunization program benefits from historically high trust in government health services. However, trust is not static. Isolated adverse events, media reporting, or misinformation can disproportionately affect public perception. Transparency in vaccine safety monitoring and communication is therefore critical.

Complacency in a Post-Elimination Era

The elimination of several diseases has altered public risk perception. Younger parents, with no lived experience of diseases such as polio or neonatal tetanus, may underestimate their severity. This epidemiological transition contributes to complacency.

Convenience and System Adaptability

Although vaccines are provided free of charge and widely accessible in Sri Lanka, changing social dynamics—including urbanization, migration, and employment patterns—may affect service utilization. Fixed clinic schedules may not align with modern lifestyles, particularly in urban and semi-urban populations.

Information Ecosystem and Digital Influence

The rapid expansion of social media has transformed health information dissemination. Unlike traditional communication channels, digital platforms facilitate rapid spread of misinformation, often outpacing corrective public health messaging.

Determinants of Vaccine Hesitancy in Sri Lanka

Knowledge and Awareness Gaps

Studies conducted in Sri Lanka indicate high general awareness of vaccination benefits but limited understanding of concepts such as herd immunity [13]. This gap suggests that information alone is insufficient; the quality and framing of communication are equally important.

Risk Perception and Cognitive Bias

Perceived risks of vaccines are often overestimated relative to disease risks. This imbalance is influenced by cognitive biases, including availability bias (greater recall of adverse events) and omission bias (preference for inaction over perceived risk).

Sociocultural and Religious Influences

Sri Lanka's diverse cultural and religious landscape shapes health behaviors. Concerns related to vaccine components or compatibility with religious beliefs, although limited in prevalence, can significantly influence specific communities.

Trust in Health Systems and Governance

Public trust in Sri Lanka's health system has historically been strong. However, global trends indicate increasing skepticism toward institutions. Maintaining trust requires consistent communication, accountability, and responsiveness to public concerns.

Impact of the COVID-19 Pandemic

The COVID-19 pandemic significantly altered public perceptions of vaccines. While it demonstrated the value of vaccination, it also exposed populations to unprecedented levels of misinformation and politicization of health interventions [8].

Public Health Implications

Sustaining high vaccination coverage is essential to maintaining herd immunity and preventing outbreaks. Even small declines in coverage can result in disproportionate increases in disease incidence.

Sri Lanka's success in disease elimination places it in a vulnerable position: as population immunity becomes increasingly dependent on vaccination rather than natural exposure, any disruption in vaccine uptake can rapidly translate into outbreaks.

The economic implications are also significant. Outbreaks of vaccine-preventable diseases can strain healthcare resources and reverse gains achieved through decades of investment in public health.

Policy and Program Implications:

Strengthening Risk Communication

There is a need to transition from traditional health education to strategic risk communication, incorporating behavioral insights and audience-specific messaging. Communication strategies must address not only knowledge gaps but also emotional and social determinants of decision-making.

Enhancing Surveillance of Vaccine Hesitancy

While Sri Lanka has strong disease surveillance systems, structured monitoring of vaccine hesitancy remains limited. Integrating behavioral surveillance into existing systems could provide early warning signals of declining confidence.

Adapting Service Delivery Models

Flexible service delivery, including extended clinic hours and outreach services, may improve convenience and uptake, particularly in urban populations.

Engaging Communities and Religious Leaders

Community engagement is essential for addressing sociocultural concerns. Collaboration with religious and community leaders can enhance credibility and acceptance of vaccination programs.

Digital Health and Countering Misinformation

Public health authorities must actively engage in digital platforms to counter misinformation. Proactive dissemination of accurate, accessible information is critical in the current information environment.

Capacity Building of Healthcare Workers

Healthcare professionals require training not only in clinical aspects of vaccination but also in communication and behavioral strategies. Confidence and competence of providers directly influence patient trust.

Discussion

Sri Lanka stands at a critical juncture in its immunization trajectory. While national coverage remains high, emerging vaccine hesitancy represents a subtle but significant threat. Unlike traditional barriers such as access and affordability, hesitancy is rooted in perceptions, beliefs, and trust—factors that are more complex to address.

The majority of vaccine-hesitant individuals are not opposed to vaccination but are uncertain. This presents an opportunity for targeted interventions. However, addressing hesitancy requires a shift from purely biomedical approaches to multidisciplinary strategies incorporating behavioral science, communication, and policy innovation.

The Sri Lankan experience also reflects broader global trends, where success in disease control leads to new challenges in sustaining public confidence. Proactive adaptation of immunization programs is therefore essential.

Conclusion

Vaccine hesitancy is an emerging challenge in Sri Lanka that has the potential to undermine decades of public health success. While the country continues to maintain high immunization coverage, evolving societal dynamics necessitate a strategic response.

Strengthening trust, enhancing communication, and adapting policies to changing contexts are critical to sustaining immunization gains. A comprehensive approach integrating epidemiological monitoring, behavioral insights, and health system strengthening will be essential to address vaccine hesitancy in Sri Lanka.

Conflicts of Interest

The authors declare no conflicts of interest.

Author Contributions

Dr. G. Sukunan: Conceptualization, critical revision, final approval.

Dr. Dharshini. M: Literature review, manuscript drafting, critical revision

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