

**Overcoming barriers to vaccination: A call for policy and community action**Muhammad Shahzad<sup>1</sup>, Samaha Khalid<sup>2</sup>, Taha Mazhar Awan<sup>3</sup>, Farah Shahzad<sup>4</sup>

*Dear Editor,* A vaccine is a biological preparation that stimulates the immune system to protect against a specific disease, often containing weakened or inactivated pathogens, toxins, or genetic material to trigger immunity without causing illness. Vaccination prevents 2–3 million deaths annually, with an additional 1.5 million deaths potentially avoidable through improved global coverage.<sup>1</sup> Vaccine Preventable Diseases (VPDs) include diseases like cholera, hepatitis, pneumonia, influenza, HIV, malaria, tetanus, polio, and typhoid.

In wealthy nations, adults, children, and newborns have better access to immunizations. In Europe and China, over 90% of infants and children receive basic vaccinations, while globally, 85% of children are protected against diseases such as measles, tetanus, hepatitis B, and polio.<sup>2</sup> Low-income countries like Pakistan face major vaccination challenges due to high costs and delivery issues, leading to many vaccine-preventable deaths. With an immunisation rate of just 60.6%, Pakistan continues to experience high child mortality.

An estimated 14.5 million "zero-dose" children remain unvaccinated worldwide, with Pakistan ranking third for the most under-vaccinated children.<sup>3,4</sup> In Pakistan, vaccine refusal stems from illiteracy, fear of side effects, and religious misconceptions. Additional barriers such as poor preparedness and weak delegation of responsibilities following decentralisation have further hindered coverage. Pakistan's Vision 2025, aligned with the Sustainable Development Goals (SDGs), aims to cut infant mortality from 74 to below 40 per 1,000 live births by improving immunization. Despite the Expanded Programmes on Immunization (EPI) since 1978, vaccine hesitancy persists due to low awareness, literacy, religious beliefs, and conspiracy theories.

A study in Peshawar showed that 22% of 340 participants

refused to vaccinate their children, with higher refusal among employed mothers (15%) compared to unemployed mothers (4.5%). Refusers were less likely to believe in vaccine protection and showed greater hesitancy.<sup>5</sup> Due to this, diseases like polio, eradicated in developed countries, remain a major threat in Pakistan. The COVID-19 pandemic worsened the country's low vaccination coverage, exposing flaws in the system.

In summary, vaccination is one of the most successful public health interventions, preventing numerous VPDs annually. It also offers economic benefits by reducing healthcare costs, hospital stays, and enhancing quality-adjusted life years (QALYs). Efforts should focus on expanding the workforce in underserved areas, ensuring reliable transport, fuel, and cold-chain storage facilities. Community programmes with healthcare workers and local influencers are key to raising awareness. Transparent evaluations and tools like E-Vaccs ensure accountability, while better salaries, benefits, and feedback systems help retain vaccinators, enhancing service delivery and coverage.

**Disclaimer:** None.

**Conflict of Interest:** None.

**Funding Sources:** None.

**DOI:** <https://doi.org/10.47391/JPMA.30353>

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**Submission completed:** 17-03-2025 **1st Revision received:** 07-04-2025

**Acceptance:** 23-04-2025 **2nd Revision received:** 22-04-2025

**Author Contribution:**

**MS, SK, TMA & FS:** Topic, literature review, managing the references, structure of work, drafting, review, final approval and agreement to be accountable for all aspects of the work.