Cervical Cancer - The Silent Epidemic: Know it, Prevent it

Gulfreen Waheed[1], Zahra Safdar [2], Muntiha Saroosh[3]

[1-3]Department of Obstetrics & Gynaecology, Avicenna Medical College & Avicenna Hospital, Lahore
Correspondence: **Prof. Gulfreen Waheed**, Principal & Director DME, HOD & Prof of Department of Obstetrics & Gynaecology, Avicenna Medical College & Avicenna Hospital, Lahore
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Cervical cancer remains a significant women's health challenge in Pakistan, with an upward trend illustrating over 6000 new cases diagnosed annually. This burden disproportionately affects women in their most productive years, resulting in substantial mortality and socio-economic consequences. The global incidence shows a downward trend, with cervical cancer cases declining due to widespread Human Papillomavirus (HPV) vaccination and effective screening programmes. However, in Pakistan, there is an urgent need to scale up HPV vaccination as the current efforts are hampered by low vaccine coverage and contextual barriers. The primary obstacles to vaccine uptake include economic constraints, misinformation and logistics challenges. Emerging opportunity is a newly launched national vaccination campaign supported by the WHO, UNICEF and Gavi, the Vaccine Alliance. We argue that the campaign's success hinges on robust community engagement, dispelling cultural misconceptions, and integrating vaccination into a comprehensive cervical cancer control strategy that includes screening and treatment. Strong political commitment, sustained funding, and multi-stakeholder collaboration are essential to transform this preventable tragedy into a women's health success story.

Cervical cancer remains one of the most preventable yet persistently overlooked women's health challenges, particularly in low- and middle-income countries (LMICs) like Pakistan. Nearly all cases of cervical cancer are caused by persistent infection with high-risk types of Human Papillomavirus (HPV), most notably HPV 16 and 18, which disrupt cellular regulation and lead to malignant transformation of cervical epithelial cells. Despite the availability of highly effective prophylactic vaccines, global uptake remains uneven; thus, cervical cancer continues to claim the lives of thousands of women annually worldwide.

Cervical Cancer Disease Burden: A Global and Local Perspective

Cervical cancer is among the top five cancers among women worldwide. The global cancer patterns reveal the incidence of cervical cancer as 19.3 per 100,000.[1] According to the global statistics, it is responsible for 342,000 deaths annually, of which 90% occur in LMICs, and the death rate is considerably higher in transitioning versus transitioned countries.[2]

Although the worldwide Human Papillomavirus (HPV) vaccine drive has resulted in a marked decline in incidence and death rate of cervical cancer. However, the disease burden of cervical cancer in Pakistan is still higher than the World Health Organization (WHO) target, with more than 6,000 new cases reported annually[1], translating into 17 new diagnoses every day. Therefore, cervical cancer continues to claim the lives of thousands of women annually in our country, underscoring a profound health inequity. However, the critical factor is that its incidence is sensitive to health-seeking behaviour and the availability of appropriate diagnostic tests.[3]

Pakistan stands at the crossroads: either continue to lose thousands of women to cervical cancer or embrace the HPV vaccine and secure a safer future for the women's population. Sadly, Pakistan remains in its shadow, with rising morbidity and mortality and every year, thousands of Pakistani families continue to lose their daughters, mothers, and sisters to a disease that is entirely preventable. To highlight the urgency of HPV vaccination, our current efforts, and the steps needed to eliminate this silent epidemic will determine the future of women's health, which is contingent upon the healthcare decisions made today.

HPV Vaccination: A Cornerstone of Prevention

The HPV vaccine is a proven, safe and cost-effective intervention that prevents infection from the high-risk HPV types leading to cervical cancers.[4] Administered to girls aged 9 to 14 years, before sexual debut, provides long-term protection and reduces the risk of precancerous lesions.[5] The WHO has proposed for global elimination of cervical cancer with its strategic " 90-70-90" policy by 2030. The framework targets 90% girls to be fully vaccinated by the age of 15, 70% of women screened by the ages of 35 and 45 years, and 90% of women diagnosed with pre-cancer lesions or malignancy receiving appropriate treatment.[6]

While many high-income countries (HICs) progress towards these goals, where HPV vaccination and organised screening programmes have led to a decline of 54–83% in incidence.[7,8] However, LMICs like Pakistan lag behind considerably with less than 30% vaccine coverage[9] and limited access to screening[10], perpetuating a high disease burden. The effect of this preventable disease goes beyond health, with women suffering in their most productive years, families facing financial constraints, children losing their caregivers, and communities enduring long-lasting socio-economic setbacks for development and economic resilience.[11]

Contextual Barrier to HPV Vaccination: Hesitancy in Pakistan

Multiple, interconnected barriers impede HPV vaccine uptake in Pakistan, mirroring trends in other LMICs but exacerbated by the country's socio-cultural context and fragile health infrastructure. These barriers include:

- Economic and Logistics Constraints: The high cost of vaccines and weakness in the healthcare system's supply chains hinder consistent availability.[11]Logistical difficulties encompass the lack of school-based vaccination programs, and thus, reaching the primary adolescent target population remains a challenge.
- Socio-Cultural Factors: Widespread misconceptions and cultural taboos surrounding sexual and reproductive health, in a milieu of lack of health education and awareness, foster HPV vaccine hesitancy in communities.[12]

Health inequities: Marginalized populations face disproportionate risks due to poor access to all preventive services, further widening existing health disparities.

Current National Efforts: A Turning Point

A pivotal development in Pakistan is the recent initiation of the 'National HPV Vaccination Campaign' in collaboration with WHO, UNICEF, and Gavi, the Vaccine Alliance. This partnership with the government supports vaccine procurement, affordable and efficient delivery.[13] WHO provides technical guidance and strategic frameworks[6], and UNICEF contributes with technical support, capacity building and expertise in community mobilization, leveraging lessons from the national polio eradication programme for creating awareness for vaccine uptake. Consistent with WHO recommendations, this campaign aims to provide free vaccination to girls aged 9 to 14 years across multiple regions of Pakistan, including Punjab, Sindh, Islamabad, and Azad Jammu Kashmir (AJK), signalling a committed approach towards a national goal of prevention of cervical cancer. Through effective implementation, this initiative could establish herd immunity and alter the trajectory of cervical cancer in Pakistan.

Sustainable Health Intervention: Leveraging Community Engagement

- While policies and vaccines are necessary, community acceptance is the ultimate determinant of success.[14] Historical lessons from Pakistan's Ploio Campaign underscore that misinformmation, myths, and cultural sensitivities can drastically derail the vaccination efforts.[15] Therefore, a structured and culturally sensitive communication strategy for health education is paramount. Furthermore, without genuine community ownership, even the most well-designed policies and programmes risk failure. Therefore, it is recommended to:
- Engage the local leaders, religious figures, and influencers like nazims and nambadars to build trust and legitimacy.
- Effective communication strategies focused on portraying HPV vaccination not as a stigma-laden intervention but as a fundamental right and a means to protect future generations.
- Utilizing social media and digital platforms to disseminate accurate information, counter myths, combat misinformation and resistance.

Empower healthcare providers to act as knowledgeable and trusted advocates for cervical cancer prevention and the HPV vaccine uptake.

Towards a Comprehensive Integrated Strategy

Vaccination alone, though foundational, is insufficient for elimination. A holistic, multi-progonged approach is required, integrating:

- Primary Prevention: HPV vaccination for adolescents aged 9 -14 years administered in schools or before marriage.
- Secondary Prevention: Mass screening for cervical cancer using PAP smear or Visual Inspection with Acetic Acid (VIA) in women aged 30 to 49 years to detect precancerous lesions.
- Tertiary Prevention: Early treatment and management of precancerous lesions and invasive cancers, and providing palliative care to affected women.

Pakistan must institutionalize HPV vaccination within the Expanded Programme on Immunization (EPI) to ensure the sustainability of progress towards cervical cancer prevention. This necessitates dedicated, regular funding along with a robust monitoring and surveillance system. Integration across all stakeholders, from government bodies and international partners to healthcare workers and local communities, will be the key to building an equitable and sustainable system.[16]

Conclusion:

Cervical cancer is a silent epidemic, but it is also one of the most preventable malignancies. Pakistan now possesses an unprecedented opportunity to change the narrative for its girls and women. The new nationnal vaccination campaign, backed by strong political commitment, international support, and a focus on community trust, represents an era for transformative change. The HPV vaccination campaign is more than a health initiative; it is a commitment to gender equity in healthcare, health system strengthening, and the protection of future generations. While the path forward is challenging, the alternative – condemning thousands of women to a preventable disease and death each year is unacceptable. We must seize this moment to turn the tide on cervical cancer, and Pakistan must join with commitment the global movement towards its elimination. The urgency is clear: protecting today's girls is an investment in saving tomorrow's women, families, and the broader fabric of society.

Let's unite to ***"Vaccinate, Prevent, Protect and End Cervical Cancer".***

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