

Research Article

HPV Vaccination beyond Cervical Cancer: Addressing the Rising Threat of Oropharyngeal Malignancies

Mishaal Mustafa Ansari^{1*}, Abeerah Aleem¹, Saman Adnan² and Sabir Khan³

¹Karachi Medical and Dental College, Pakistan

²Jinnah Sindh Medical University, Pakistan

³Khyber Medical College, Pakistan

Ansari MM: <https://orcid.org/0009-0000-1828-4361>

Aleem A: <https://orcid.org/0009-0004-7831-1092>

Adnan S: <https://orcid.org/0009-0004-6037-7544>

Abstract

Purpose of review: The purpose of this letter is to highlight the rising incidence of malignancies associated with Human Papillomavirus (HPV) and how it is important to modify and implement public health policies to increase awareness and prevent the incidence rate of oropharyngeal cancer specifically in male.

Recent findings: Recent findings show a rising rate of HPV-related malignancies in the US and UK over the past two decades, particularly oropharyngeal cancers in men.

Summary: To summarize, the rising threat of HPV-associated oropharyngeal cancer emphasizes the urgent need for increased public health awareness and vaccination efforts specifically in males. Public health initiatives and further research are crucial for this growing issue.

Introduction

Human papillomavirus (HPV) infection is one of the most common sexually transmitted infections globally. It is caused by a DNA-based virus that specifically targets epithelial tissues of mucous membrane and skin surfaces. Based on its association with the development of certain types of cancer and oncologic disease, it is categorized into High-risk and low-risk HPV. The low-risk type includes HPV-6 and HPV-11, which contribute to 90% of genital warts. The most common oncogenic high-risk HPV types are HPV-16 and HPV-18, which are involved in the development of malignancies like cervical, vaginal, anal, and oropharyngeal cancers [1].

Rising incidence of oropharyngeal cancer

The Age-Standardized Incidence Rates (ASRs) for oropharyngeal cancer were found to be 4.7 per 100,000 in Taiwan and 2.6 per 100,000 in India, likewise higher for other South and Southeast Asian countries including Pakistan. The incidence rate was exponentially higher in males as compared to females [2].

In the United States, HPV associated Oropharyngeal cancer detection was 71.7% during 2000-2004. More recent population-based analyses also indicate a consistent increase in the incidence of HPV-positive OPSCC cases, with positivity rising from 66.37% in 2010 to 79.32% in 2016 among tested cases [3].

In the United Kingdom, it was reported that 51.8% of cases (95% CI: 49.3–54.4) were OPSCC during 2002–2011 [4,5].

In both countries, the incidence rate of oropharyngeal cancer in men is rising rapidly. The occurrence of HPV+ OPSCC has increased over the last 20 years. It occurs more in men, possibly due to vulnerability and transmission potential through sexual activities [6].

Gender disparity in vaccination program

Gender equality are the pillars of Universal Health Coverage (UHC) and Primary Health Care System (PHC). Vaccination of the female population is a well-established point in vaccination policies, with most issues resolved. In contradiction, questions

More Information

***Corresponding author:** Mishaal Mustafa Ansari, 1b 8/10 Nazimabad number 1, Karachi, Pakistan, Email: mishaalmustafa2004@gmail.com

Submitted: September 21, 2026

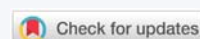
Accepted: October 13, 2026

Published: October 15, 2026

Citation: Ansari MM, Aleem A, Adnan S, Khan S. HPV Vaccination beyond Cervical Cancer: Addressing the Rising Threat of Oropharyngeal Malignancies. J Community Med Health Solut. 2026; 7(2): 109-111. Available from: <https://dx.doi.org/10.29328/journal.jcmhs.1001084>

Copyright license: © 2026 Ansari MM, et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Keywords: Human Papillomavirus (HPV); HPV vaccine; Vaccination policies; HPV in males; Oropharyngeal cancer



and a lack of policies arise in vaccination policies for men. Here we are discussing the lack of policies for HPV vaccination in men, as HPV is a major leading cancer-causing organism in both males and females. More importantly, males are the reservoir of HPV related infections and cancers, including oropharyngeal cancer, penile cancer, and anal cancer. It is reported that 95% of anal cancers are caused by HPV, and a greater chunk of oropharyngeal cancer is associated with HPV in males. Further, there is increasing discussion that men who have sex with men (MSM) are at greater risk of HPV related infections and neoplasia [7,8].

Missed opportunity in vaccination program

Male genital HPV infection remains relatively understudied as compared to female genital HPV infection.

HPV infections: Understanding of HPV infection in men is important, as men can develop HPV-related diseases as well. This Awareness is essentially important for men who have sex with men (MSM), as anal HPV infection is four times more prevalent among MSM than among men who have sex with women and is associated with a higher risk of HPV related cancer [9]. HPV not only involves neoplasms but also involves infertility and chromosomal disruption. An increasing prevalence of HPV in the semen of males with idiopathic infertility has been mentioned in several studies. Several authors have noted disruption of many seminal parameters, including sperm and sperm movement. Males sexual behavior actions straight away affects females related to HPV infectious pathologies. Therefore, it is essential to include males in HPV vaccination policies for their health and their partners' safety. According to research the presence of HPV DNA in male genital tract in the seminal fluid and sperm. It also affects motility and male fertility overall. The authors found that infected individuals had higher incidence of hypospermia and also include seminal fluid viscosity [10,11].

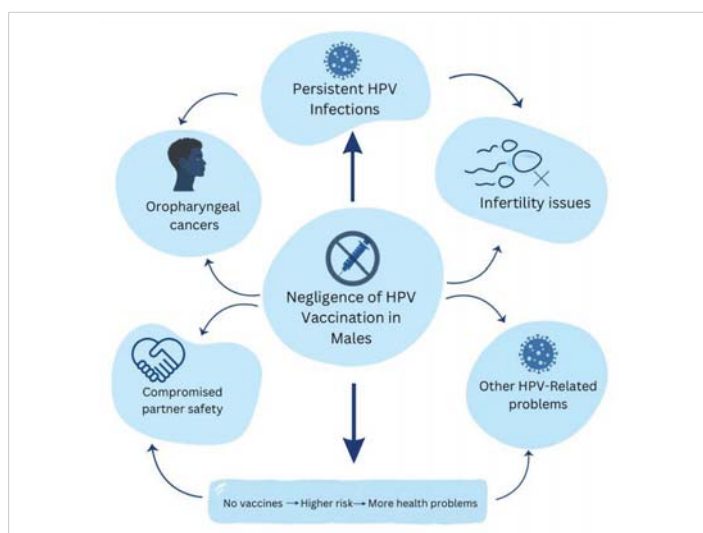


Figure 1: This schematic figure shows problems and diseases caused by HPV in males, such as oropharyngeal cancers, infertility issues and compromise partner safety. Arrows show issues interrelated with negligence of vaccination in males for HPV.

The need to update public messaging and policy

Public health efforts and immunization plans must be updated to present HPV vaccination as cancer prevention for everyone, not only women. This includes emphasizing its protection against oropharyngeal cancer in men [12] alongside its protection against cervical cancer, as reported by these studies [13]. Right now, most of the programs focus on women [14], leaving men at risk and allowing continued transmission. To address this, we need clear communication, school vaccination programs [15] for boys, clinician reminders, directives from health ministries, and ensuring equitable vaccine access [16]. These steps will reduce stigma and boost national uptake. Furthermore, to resonate with diverse populations, communications must underscore the prevention of head and neck cancers, the benefits for sexual health, and the implications for fertility.

Call to action

Reducing HPV-related oropharyngeal cancer requires coordinated efforts in research, policy, and healthcare. Governments must offer gender-neutral HPV vaccination, fund catch-up programs for adolescent boys, and integrate vaccination into schools and primary care. Moreover, researchers should monitor oral HPV, evaluate vaccine effectiveness against oropharyngeal cancer, and conduct cost-effectiveness analyses for males. Also, healthcare providers should use reminders, promote public education, and reach out to specific groups, such as men who have sex with men, while ensuring fair coverage. Finally, international organizations must assist low-resource countries with vaccine procurement, research implementation, and ongoing funding.

References

1. Wolf J, Kist LF, Pereira SB, Quessada MA, Petek H, Pille A, Maccari JG, Mutlaq MP, Nasi LA. Human papillomavirus infection: Epidemiology, biology, host interactions, cancer development, prevention, and therapeutics. *Rev Med Virol.* 2024 May;34(3):e2537. Available from: <https://dx.doi.org/10.1002/rmv.2537>
2. Filho AM, Warnakulasuriya S. Epidemiology of oral cancer in South and South-East Asia: Incidence and mortality. *Oral Dis.* 2024 Nov;30(8):4847-4854. Available from: <https://dx.doi.org/10.1111/odi.14906>.
3. Kim SI, Lee JW, Eun YG, Lee YC. A SEER-based analysis of trends in HPV-associated oropharyngeal squamous cell carcinoma. *Infect Agent Cancer.* 2024 Jun 28;19(1):29. Available from: <https://dx.doi.org/10.1186/s13027-024-00592-5>.
4. Chaturvedi AK, Engels EA, Pfeiffer RM, Hernandez BY, Xiao W, Kim E, et al. Human papillomavirus and rising oropharyngeal cancer incidence in the United States. *J Clin Oncol.* 2011 Nov 10;29(32):4294-301. Available from: <https://dx.doi.org/10.1200/JCO.2011.36.4596>.
5. Schache AG, Powell NG, Cuschieri KS, Robinson M, Leary S, Mehanna H, et al. HPV-Related Oropharynx Cancer in the United Kingdom: An Evolution in the Understanding of Disease Etiology. *Cancer Res.* 2016 Nov 15;76(22):6598-6606. Available from: <https://dx.doi.org/10.1158/0008-5472.CAN-16-0633>.
6. Ferris RL, Westra W. Oropharyngeal Carcinoma with a Special Focus on HPV-Related Squamous Cell Carcinoma. *Annu Rev Pathol.* 2023 Jan 24;18:515-535. Available from: <https://dx.doi.org/10.1146/annurev-pathmechdis-031521-041424>



7. Spînu AD, Anghel RF, Marcu DR, Iorga DL, Cherciu A, Mischianu DLD. HPV vaccine for men: Where to? (Review). *Exp Ther Med*. 2021 Nov;22(5):1266. Available from: <https://dx.doi.org/10.3892/etm.2021.10701>.
8. Rosado C, Fernandes ÂR, Rodrigues AG, Lisboa C. Impact of Human Papillomavirus Vaccination on Male Disease: A Systematic Review. *Vaccines (Basel)*. 2023 Jun 9;11(6):1083. Available from: <https://dx.doi.org/10.3390/vaccines11061083>.
9. Kusters JMA, Obels I, van der Klis FRM, King AJ, Heijman T, Heijne JCM, et al. Prevalence and risk factors for HPV seropositivity and anogenital DNA positivity among men who have sex with men: a repeated cross-sectional study. *Int J Infect Dis*. 2024 Aug;145:107094. Available from: <https://dx.doi.org/10.1016/j.ijid.2024.107094>.
10. Zhaffal A, Salame L. Semen human papillomavirus (HPV) shedding in males: frequency, clinical significance, and reproductive outcomes—literature review. *Egypt J Med Hum Genet*. 2023;24:74. Available from: <https://dx.doi.org/10.1186/s43043-023-00131-z>
11. CDC. Cancer. 2024 [cited 2025 Oct 21]. HPV and Oropharyngeal Cancer. Available from: <https://www.cdc.gov/cancer/hpv/oropharyngeal-cancer.html>
12. Chenafi-Adham S, Boussetta-Charfi O, Pillet S, Bourlet T. Impact of Human Papillomavirus (HPV) on Male and Female Fertility. *Pathogens*. 2024 Dec 7;13(12):1076. Available from: <https://dx.doi.org/10.3390/pathogens13121076>.
13. Macilwraith P, Malsem E, Dushyanthen S. The effectiveness of HPV vaccination on the incidence of oropharyngeal cancers in men: a review. *Infect Agent Cancer*. 2023 Apr 24;18(1):24.
14. Human papillomavirus vaccines: WHO position paper, December 2022 [Internet]. [cited 2025 Oct 21]. Available from: <https://www.who.int/publications/i/item/who-wer9750-645-672>
15. Thilly N, Michel M, Simon M, Bocquier A, Gagneux-Brunon A, Gauchet A, et al. Effectiveness of a School- and Primary Care-Based HPV Vaccination Intervention: The PrevHPV Cluster Randomized Trial. *JAMA Netw Open*. 2024 May 23;7(5):e2411938.
16. Mavundza EJ, Iwu-Jaja CJ, Wiyeh AB, Gausi B, Abdullahi LH, Halle-Ekane G, et al. A Systematic Review of Interventions to Improve HPV Vaccination Coverage. *Vaccines*. 2021 June 23;9(7):687.