

Review Article

Cervical cancer and human papilloma virus vaccination: gap and barriers

Ram Kumar Garg^{1*}, Bhartendra Sharma²

Department of Community Medicine, Guru Dronacharya College of Nursing, Yol Cantt Dharamshala, Himachal Pradesh, India

²Department of Medical Surgical, Mahatma Gandhi Nursing College, Mahatma Gandhi University of Medical Sciences and technology, Jaipur, Rajasthan, India

Received: 12 October 2022

Accepted: 03 December 2022

*Correspondence:

Dr. Ram Kumar Garg,

E-mail: principalnsg9@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Cervical cancer, which is mostly caused by infection with the human papillomavirus (HPV), is the second most common malignancy in women worldwide and the main illness affecting Indian women. It has been demonstrated that many developing countries lack basic information and health-seeking behaviours, necessitating the need for an effective awareness and immunization programme. For public health, the HPV vaccine is essential. For all females who can afford it, the Indian Academy of Paediatrics Committee on Immunization (IAPCOI) suggests administering the HPV vaccine. Females as young as 9 years old and those who have not received all recommended vaccinations between the ages of 13 and 26 can receive vaccinations. Cervical cancer can be prevented in a number of ways, however vaccination is currently the most effective strategy. The most effective means of preventing cervical cancer include HPV vaccination and routine cervical screening. Before beginning this chemoprophylaxis against cervical cancer, parents and caregivers of the child must receive education regarding HPV vaccine. In order to mobilise the scientific, public health, and civil society communities to adopt the vaccination policy, gaps and challenges to HPV vaccination access and delivery must be addressed.

Keywords: HPV vaccination, Cervical cancer, Indian Academy of Paediatrics Committee

INTRODUCTION

Incidences of cervical cancer account for 27% of all cases worldwide, with 16–17% of women living in India.¹ With 60,000 annual deaths and 100,000 newly diagnosed cases, India is currently thought to be responsible for around one-third of all cervical cancer fatalities globally. The mortality rate from cervical cancer has dropped over the past 40 years as a result of better treatment and the establishment of widespread screening programmes.²

In 2020, there were 604,100 new cases of cervical cancer discovered worldwide, and this illness was responsible for 341,831 fatalities, based on Globocan 2020. In India,

cervical cancer represented 9.4% of all cancer cases and 18.3% (123,907) of all new cases of cancer in that year. It continues to be one of the more common cancers in India and is the primary cause of cancer-related death in women in low- and middle-income countries.³

Cervical cancer is the fifth most prevalent malignancy in humans and the second most common condition in women worldwide. Additionally, it is the main reason for cancer-related deaths in developing countries. Sexual transmission of the human papilloma virus is the main risk factor for cervical intraepithelial neoplasia and invasive cervical cancer (HPV).⁴

The primary cause of cervical cancer is the human papillomavirus (HPV), accounting for 70%–80% of all occurrences. HPV-16 and HPV-18 account for the majority of cases. According to Indian studies, HPVs 16 or 18 are present in roughly 82.7% of invasive cervical cancers.⁵

In rural areas, where most women lack basic literacy skills, are unaware of the risks of cervical cancer, and have limited access to healthcare facilities, the situation is more perturbing.⁶

Cervical Cancer is a significant public health concern in India, necessitating the need to raise awareness among women about its risk factors and protective measures. Through health education and screening programmes, there is an urgent need to make them more aware of the disease. Although the traditional screening method is a Pap smear, it is less well-known in rural areas. The shame that women experience when discussing the condition and screening methods, particularly in rural areas, is another obstacle to cervical cancer diagnosis.⁷

Cervical cancer can be prevented and treated using a multifaceted strategy that includes screening, early diagnosis, preventative, and treatment approaches.⁸

All females who can afford the vaccine should be given the HPV vaccine, according to the Indian Academy of Paediatrics Committee on Immunization (IAPCOI). The vaccination should be administered prior to sexual debut since protection only occurs when it is administered before HPV infection. Instead of vaccinating against a sexually transmitted infection, it is preferable to immunise parents against cervical cancer. Vaccines do not provide 100 percent protection against cervical cancer and are not a substitute for routine screening. Therefore, screening programmes should continue in accordance with suggestions. According to the data now available, both vaccines are equally effective and safe at preventing both precancerous lesions and cervical cancer.⁹

Health care professionals (HCP) are essential in the prevention of cervical cancer and in raising public knowledge of HPV vaccinations. The most noticeable front-line workers delivering health education to patients and the broader public are HCPs, including paramedical employees.¹⁰

According to the operational requirements, existing health care professionals (HCPs) at various facilities were supposed to administer the population-based cancer screening programme in the country. It was considered obvious that the framework required a team at all levels of care that represented a variety of pertinent medical disciplines.¹¹ The current HCPs, however, lacked the knowledge and instruction necessary for cancer screening. Offering in-person training to all HCP cadres was neither practical nor financially sustainable given the size of the nation and the number of people engaged.¹²

GAPS AND BARRIERS

It was advised to use visual screening tests like VIA/VILI until an affordable, accurate HPV test was made available in India. These operations, which could be carried out by certified medical professionals and paramedical staff with adequate training and quality assurance, would benefit from on-site screening and treatment of modest degrees of abnormalities discovered.¹³

Another aspect that required careful consideration was the fact that population-level screening can considerably benefit the population when planned and organised, whereas unorganised screening can raise expenses and limit benefits.¹⁴

Since the Operational Guidelines for the Management of Common Cancers in India were created, a lot has changed. However, there is still much work to be done before early cervical cancer diagnosis is widely used. ECHO training programmes and satellite clinic models make it possible to establish a separate, dedicated cell with the responsibility of monitoring and evaluating the NPCDCS programme and collaborating with the numerous stakeholders, including the various state players. For the complete implementation of these principles, with recurring adjustments, the government will need to make a more solid commitment. Given that health is a state responsibility in India, as demonstrated by the Sikkim model's success, a coordinated approach to the implementation of statewide cervical cancer prevention and HPV vaccination will presumably provide favourable results.¹⁵

The primary prevention (serotype specific with little cross-protection) of cervical cancer is HPV vaccination. Developing nations require a second-generation HPV vaccine that is affordable in order to address a number of challenges unique to the area. However, until then, secondary prevention should be implemented through routine cervical cancer screening using the infrastructure already in place and low-cost screening techniques like Pap smear and HPV DNA assays. The vaccination contains no live virus, therefore there is no chance of contracting HPV as a result of receiving it. The best strategy to prevent cervical cancer is through HPV vaccination and routine cervical screening.¹⁶

In this urban African American female population, there was little knowledge about HPV, cervical cancer, and HPV vaccination. To raise awareness among these women, who have the highest rate of cervical cancer death in the US, targeted educational health programmes are required. These patient education programmes must be created by medical professionals and should take into account the cultural and literacy requirements of this specific group of women. Additionally, AAW have a significant role in community health and decision-making, thus educating them through their medical professionals will have a significant impact.¹⁷

Concerns from medical professionals regarding the HPV vaccine may prevent it from being stocked and subsequently given to adolescents. Even providers who keep the vaccination on hand expressed worries. Research is required to identify other potential obstacles to vaccine coverage as well as how to alleviate the worries of these medical practises.¹⁸

The attitudes of parents toward their kids and the vaccine also have an impact on immunisation rates. Parents who believe their daughter has little danger of engaging in sexual behaviour frequently neglect to vaccinate their children.¹⁹

Although the idea of a school-based immunisation clinic is possible in the US, certain research indicate that important stakeholders are dubious of this strategy. In New Mexico, important stakeholders including parents of adolescent boys and girls, adolescent females, middle school nurses, and middle school administrators participated in focus groups to discuss their concerns with this kind of intervention. Parents were generally hesitant about a middle school-based programme, and school administrators believed they lacked the power to implement it.²⁰

In order to enhance adolescent awareness and interest in HPV vaccination, it is crucial to comprehend and target the audience. To discover the most effective way to contact the target community, they started by holding a focus group. Additionally, they used the science instructor to integrate the HPV teaching into the school's existing structure. They were able to considerably raise middle and high school students' interest in immunisation through education by involving the target population.²¹

CONCLUSION

Cancer is an incurable disease, although cervical cancer being the most prevalent gynaecological cancer affecting women between the ages of 15 and 44. There are various cancer therapy techniques. The most frequent viral infection of the reproductive tract is caused by the human papillomavirus (HPV). There are HPV vaccines that can be used as a preventative measure. According to research, immunizations may be useful in the fight against some malignancies. Raising public awareness of the HPV infection and the significant number of malignancies it contributes to is necessary. It is crucial to encourage parents and caregivers to prioritise cancer prevention and education, as well as to create a strategy for long-term monitoring of girls who have received immunizations. Before administering this chemoprophylaxis for cervical cancer, parents and caregivers of the child must be informed about HPV vaccination. The two HPV vaccines are commercially available in India and have received approval from the World Health Organization, the US Food and Drug Administration, the European Medicines Agency, the Drug Controller General of India (DCGI), and two vaccination initiatives. The vaccination contains

no live virus, therefore there is no chance of contracting HPV as a result of receiving it. The best strategy to prevent cervical cancer is through HPV vaccination and routine cervical screening. In order to mobilise the scientific, public health, and civil society groups to support the vaccination policy, it is necessary to identify the gaps and barriers in the access and delivery of HPV vaccination. The best way to influence and increase public awareness is through communication. It is crucial to inform parents and caregivers about the cervical cancer vaccine and to develop uplifting, intelligible messages that the public and the media can recognise as their own.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Shankar A, Roy S, Rath GK, Chakraborty A, Kamal VK, Biswas AS. Impact of cancer awareness drive on generating awareness of and improving screening for cervical cancer: A study among school teachers in India. *J Glob Oncol*. 2018;4:1-7.
2. Shankar A, Roy S, Rath GK, Kamal VK, Kharade V, Sandeep K. Carcinoma uterine cervix: Evolving trends and Impact of national cancer control Program in India. *Ind J Soc Prev Rehab Onc*. 2017;1:16-22.
3. International Agency for Research on Cancer. Globocan; 2020. <https://gco.iarc.fr/>. Accessed 29 April 2021.
4. Schiffman M, Castle PE, Jeronim J, Rodrigue AC, Wacholde S. Human papillomavirus and cervical cancer. *Lancet* 2007;370:890-907.
5. Rastogi A. Human papillomavirus (HPV) infection and cervical cancer. NHP. Published by Zahid. <https://www.nhp.gov.in/disease/communicable-disease/human-papillomavirus-hpv-infection-and-cervical-cancer>. Accessed 8 April 2016.
6. Srivastava AN, Misra JS, Srivastava S, Das BC, Gupta S. Cervical cancer screening in rural India: status and current concepts. *Indian J Med Res*. 2018;148(6):687–96.
7. Braaten KP, Laufer MR. Human papillomavirus (HPV), HPV-related disease, and the HPV vaccine. *Rev Obstet Gynecol*. 2008;1:2–10
8. Rashid S, Labani S, Das BC. Knowledge, awareness and attitude on HPV, HPV vaccine and cervical cancer among the college students in India. *PloS One*. 2016;11:e0166713
9. Singhal T. Indian Academy of Pediatrics Committee on Immunisation (IAPCOI) - Consensus Recommendations on Immunization 2008. *Indian Pediatr*. 2008;45:635–48.
10. Chawla PC, Chawla A, Chaudhary S. Knowledge, attitude & practice on human papillomavirus vaccination: a cross-sectional study among healthcare providers. *Indian J Med Res*. 2016;144:741–9.

11. Maggi R. Assessing breast and cervical cancer in India: a literature review; 2018.
12. Hariprasad R, Babu R, Arora S, Mehrotra R. Capacity building in cancer screening using ECHO (extension for community healthcare outcomes): innovative and cost-effective model. *J Glob Oncol*. 2018;4(Supplement 2):160s–160s.
13. Rajaraman P, Anderson BO, Basu P, Belinson JL, Cruz AD, Dhillon PK, et al. Recommendations for screening and early detection of common cancers in India. *Lancet Oncol*. 2015;16(7):e352–61.
14. Sivaram S, Majumdar G, Perin D, Nessa A, Broeders M, Lynge E, et al. Population-based cancer screening programs in low-income and middle-income countries: regional consultation of the International Cancer Screening Network in India. *Lancet Oncol*. 2018;19(2):e113–22.
15. Salaria S. Focus on Sikkim model to check cervical cancer. 2018. <https://timesofindia.indiatimes.com/city/noida/focus-on-sikkimmodel-to-check-cervical-cancer/articleshow/65600408.cms>. Accessed 29 April 2021.
16. Kaarthigeyan K. Cervical cancer in India and HPV vaccination. *Indian J Med Paediatr Oncol*. 2012;33:7-12.
17. Strohl AE, Mendoza G, Ghant MS, Cameron KA, Simon MA, Schink JC, et al. Barriers to prevention: knowledge of HPV, cervical cancer, and HPV vaccinations among African American women. *American Journal of Obstetrics and Gynecology*. 2015;212(1):65.e1-65.e5.
18. Keating KM, Brewer NT, Gottlieb SL, Liddon N, Ludema C, Smith JS. Potential Barriers to HPV Vaccine Provision Among Medical Practices in an Area with High Rates of Cervical Cancer. *Journal of Adolescent Health*. 2008;43(4Suppl):S61-7.
19. Krawczyk A, Perez S, King L, Vivion M, Dubé E, Rosberger Z. Parents' decision-making about the human papillomavirus vaccine for their daughters: II. Qualitative results. *Hum Vaccin Immunother*. 2015;11(2):330–6.
20. Nodulman JA, Starling R, Kong AS, Buller DB, Wheeler CM, Woodall WG. Investigating stakeholder attitudes and opinions on school-based human papillomavirus vaccination programs. *J Sch Health*. 2015;85(5):289–98.
21. Gargano LM, Herbert NL, Painter JE, Sales JM, Vogt TM, Morfaw C, et al. Development, theoretical framework, and evaluation of a parent and teacher-delivered intervention on adolescent vaccination. *Health Promot Pract*. 2014;15(4):556–67.

Cite this article as: Garg RK, Sharma B. Cervical cancer and human papilloma virus vaccination: gap and barriers. *Int J Community Med Public Health* 2023;10:511-4.