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Awareness and Acceptance of HPV Vaccine Among Healthcare Workers of Rural Haryana: A Cross-Sectional Study

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ABSTRACT

Background: Cervical cancer, primarily caused by Human Papillomavirus (HPV) infection, remains a major public health concern in India, particularly in rural regions. Despite the availability of preventive vaccines such as Cervavac, uptake among healthcare professionals—key advocates for public health—has been suboptimal. This study aims to assess the awareness, knowledge, and acceptance of HPV vaccination among healthcare workers in rural Haryana.

Methods: A cross-sectional study was conducted between January and March 2025 involving 160 healthcare professionals, including medical, nursing, and paramedical staff aged 18–45 years, from rural health centers in Haryana. Data were collected using a validated questionnaire covering demographics, HPV awareness, vaccination status, and attitudes toward vaccination. Descriptive statistics and chi-square tests were employed for analysis.

Results: The mean age of participants was 25.2 years, with a female majority (67%). While 95% of respondents were aware of the HPV vaccine and its role in preventing cervical cancer, only 16% had received vaccination. Among those aware, just 17% were vaccinated, highlighting a gap between knowledge and action. The most common barriers cited were limited availability (16%), cost concerns (5%), and lack of conviction (6%). Awareness levels were high across educational levels, but vaccination rates remained low, underscoring the need for targeted interventions.

Conclusion: Despite high awareness, HPV vaccination uptake among healthcare workers in rural Haryana is limited. Addressing practical barriers through affordable vaccine programs and strengthening advocacy among healthcare professionals is critical to enhancing HPV vaccine coverage and reducing cervical cancer burden in rural India.

Keywords: *HPV, cervical cancer, rural healthcare workers, vaccine awareness, acceptance, Cervavac*

1. INTRODUCTION

Cervical cancer is a major public health concern worldwide, ranking as the fourth most common cancer among women globally. Low- and middle-income countries, including India, account for nearly 80% of the global burden, with India alone contributing to almost one-fifth of new cases. The primary cause of cervical cancer is persistent infection with Human Papillomavirus (HPV), especially types 16 and 18, which are responsible for over 70% of cases. The World Health Organization (WHO) recommends HPV vaccination as a key preventive strategy, but implementation remains suboptimal in many regions, particularly rural areas where access to healthcare is limited.

In India, the launch of the indigenously developed quadrivalent HPV vaccine, Cervavac, in January 2023, has been a significant step towards affordable prevention. However, awareness and acceptance among healthcare professionals—the frontline in community health education—remain critical for successful vaccine uptake. This study aims to assess awareness and acceptance of HPV vaccination among healthcare workers in rural Haryana.

2. OBJECTIVES

- To assess the awareness and knowledge about HPV infection and vaccination among healthcare workers in rural Haryana.
- To evaluate the acceptance and willingness to recommend or receive the HPV vaccine.

3. MATERIALS AND METHODS

Study Design: Cross-sectional descriptive study.

Study Area: Primary Health Centres, Sub-Centres, Medical college & hospitals in rural districts of Haryana.

Study Period: January to March 2025.

Sample Size: 160 healthcare professionals (doctors, nurses, paramedics) aged 18–40 years.

Sampling Technique: Convenient sampling.

Inclusion Criteria: Healthcare professionals providing informed consent.

Data Collection Tool: Pre-designed, validated questionnaire based on WHO and ICMR guidelines
Data Analysis: SPSS Version 25; Descriptive statistics and Chi-square tests for significance ($p < 0.05$)

4. SAMPLE SIZE CALCULATION

Based on a 95% confidence interval, 5% margin of error, and an expected awareness prevalence of 80% (as per previous studies), a minimum sample size of 150 was estimated. We recruited 160 participants to account for potential non-response.

5. RESULTS

5.1 Demographics

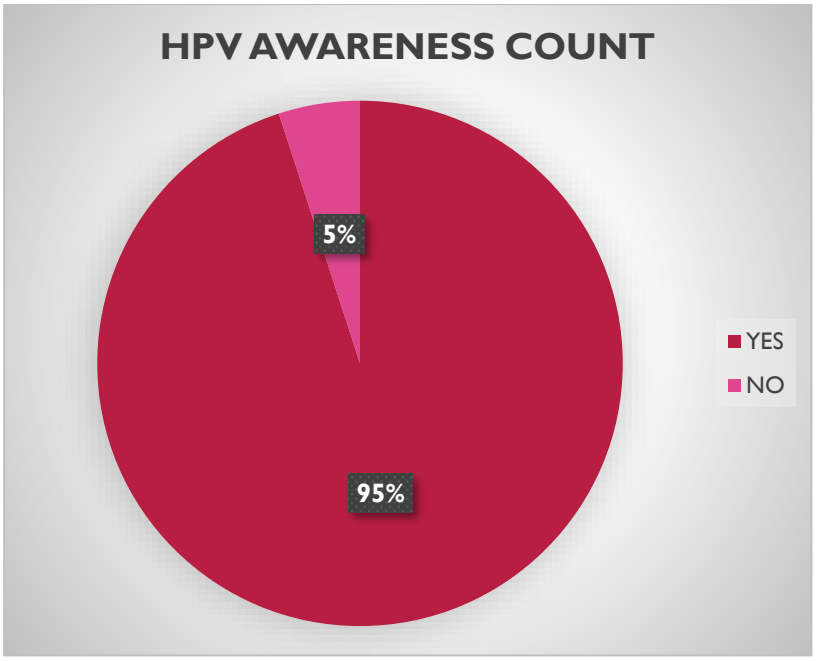
Variable	Frequency (n=160)
Mean Age	25.2 years
Age Group 20–30	147 (91.8%)
Age Group 30–40	13 (8.1%)
Female	107 (66.8%)
Male	53 (33.1%)

5.2 Educational Status

Education Level	Count
MBBS 3rd Year	16
MBBS 4th Year	59
MBBS Intern	49
Postgraduate Student	27
Post MD/MS	9

5.3 HPV Awareness and Vaccination

Category	Yes	No
Aware of HPV	152	8
Vaccinated	26	134
Vaccinated among Aware Group	26/152	—



5.4 Number of Doses Taken

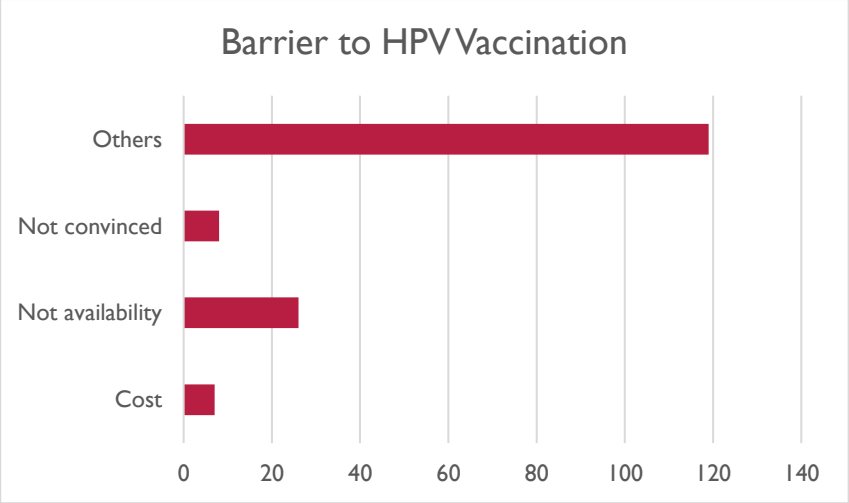
Doses Taken	Count
1 Dose	5
2 Doses	14
3 Doses	14
Not Applicable	127

5.5 Post-Vaccination Complications

Complications	Count
No	30
Yes	5
Not Applicable	125

5.6 Barriers to Vaccination

Barrier	Count
Cost	7
Not Available	26
Not Convinced	8
Others	119



5.7 HPV Awareness and Vaccination

	Vaccinated	Not Vaccinated	Total
Aware (Yes)	26	126	152
Not Aware (No)	0	8	8
Total	26	134	160

Since $p > 0.05$, **no significant association** between HPV Awareness and Vaccination

6. DISCUSSION

Our study reveals a stark contrast between high awareness (95%) and low vaccination uptake (16%) among healthcare professionals in rural Haryana. While nearly all respondents were aware of HPV and its vaccine, only a small proportion had been vaccinated, underscoring the persistent barriers that hinder public health progress in rural settings.

These findings align with previous studies across India and globally, where despite increased awareness, practical barriers such as cost, availability, and misconceptions continue to limit HPV vaccine coverage. The majority of unvaccinated participants cited reasons like non-availability (16%) and lack of conviction (6%), echoing concerns noted in earlier research by Kumar et al. and Swarnapriya et al. (2020, 2015). Female healthcare workers and those with medical backgrounds exhibited higher awareness and acceptance, consistent with global trends.

The introduction of Cervavac offers a promising step toward addressing affordability issues. However, without consistent supply chains, widespread education campaigns, and integration of HPV vaccination into national programs, the impact will remain limited. Our study highlights the need for policy-level interventions, regular sensitization training for healthcare workers, and community outreach initiatives to translate knowledge into action.

7. CONCLUSION

Despite a high level of awareness about HPV and its vaccine among healthcare workers in rural Haryana, actual vaccination rates remain low. Targeted interventions addressing logistical challenges, education gaps, and vaccine availability are essential to bridge the knowledge-action gap and reduce cervical cancer incidence in rural India.

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