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KNOWLEDGE, ATTITUDE, PRACTICE REGARDING HPV VACCINATION AMONG HEALTHCARE PROFESSIONALS: BRIDGING THE GAP BETWEEN AWARENESS AND IMPLEMENTATION

Obstetrics & Gynaecology

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ABSTRACT

Background: Cervical cancer remains a significant public health concern worldwide, particularly in low- and middle-income countries. Persistent infection with high-risk human papillomavirus (HPV) is the primary cause, and vaccination offers an effective preventive strategy. Healthcare professionals play a crucial role in promoting HPV vaccination, and their knowledge, attitude, and practices (KAP) directly influence vaccine uptake. **Objective:** To assess the knowledge, attitude, and practices regarding HPV vaccination among healthcare professionals and to identify barriers influencing vaccine uptake and recommendation. **Methods:** This cross-sectional study was conducted among healthcare professionals at a tertiary care center over a period of four months (October 2025 to January 2026). A structured, self- administered questionnaire was used to collect data on demographics, knowledge, attitude, and practices related to HPV vaccination. Knowledge was assessed using 20 questions, attitude using 11 Likert-scale items, and practice using 6 questions. Data were analyzed using SPSS version 26, and results were expressed as frequencies and percentages. **Results:** A total of 154 healthcare professionals participated in the study. Overall, 85.7% of participants demonstrated good knowledge regarding HPV infection and vaccination. A positive attitude toward HPV vaccination was observed in 83.9% of participants. However, only 39.1% demonstrated good vaccination practices, and 30.5% reported having received the HPV vaccine. The major barriers identified were cost and lack of awareness. **Conclusion:** Although healthcare professionals exhibited good knowledge and positive attitudes toward HPV vaccination, a significant gap exists in translating this into practice. Addressing barriers such as cost, improving awareness, and strengthening training programs are essential to enhance vaccine uptake and recommendation practices.

KEYWORDS

INTRODUCTION

Cervical cancer remains a major public health problem globally[1]. It is the fourth most common cancer among women worldwide, with a disproportionately higher burden in low- and middle- income countries[1]. Persistent infection with high-risk human papillomavirus (HPV) types, especially HPV-16 and HPV-18, is responsible for nearly 70% of cervical cancer cases[2]. This makes HPV one of the most clearly identified and preventable causes of cancer.

The introduction of HPV vaccines has significantly transformed cervical cancer prevention. Multiple studies have shown a substantial decline in HPV infection, genital warts, and precancerous cervical lesions in countries with high vaccination coverage[3]. The World Health Organization recommends HPV vaccination for girls aged 9–14 years, with catch-up vaccination for older adolescents and young adults[4]. HPV vaccination is also recommended for boys, ideally between 9-14 years of age, to prevent HPV-related cancers such as anal, penile, and oropharyngeal cancers, and to enhance herd immunity by reducing transmission.

In line with global efforts, the World Health Organization has launched a cervical cancer elimination strategy with the 90-70-90 targets, aiming that by 2030: 90% of girls are fully vaccinated with HPV vaccine by age 15, 70% of women are screened using a high-performance test by ages 35 and 45, and 90% of women with cervical disease receive appropriate treatment[5]. Achieving these targets is expected to significantly reduce the incidence and mortality of cervical cancer worldwide.

Healthcare workers play a critical role in influencing HPV vaccine acceptance, making their knowledge, attitude, and practices (KAP) essential determinants of vaccination success[6]. Evaluating KAP among healthcare providers helps identify gaps that may hinder optimal vaccine delivery, counseling, and implementation. Understanding these factors becomes especially important in settings where cervical cancer remains a leading cause of morbidity and mortality.

AIMS AND OBJECTIVES

This study was conducted to assess the knowledge, attitude, and practices regarding HPV vaccination among healthcare professionals, identify barriers to vaccine uptake, and understand the factors influencing their recommendation patterns .

MATERIALS AND METHODS

Study Design: The study was a cross sectional study.
Data Collection: Data was collected over four months (October 2025 to January 2026) at Akash hospital, A structured questionarre was used to collect informed regarding demographic details, knowledge about HPV infection and vaccination, attitute toward HPV vaccination and vaccination practices. Each participant could give the survey only once, ensuring data integrity.

Inclusion Criteria

- All participants aged above 18 years.
- Healthcare workers including post graduates, medical and para medical faculty.

Exclusion Criteria

- Participants aged below 18 years and participants not willing to participate in the study.
- Retired professionals, administrative staff, and incomplete responses.
- Postgraduates and staff from the department of Obstetrics and Gynaecology and Paediatrics.

Sampling Method: A convenience sampling technique was used to recruit participants. The required sample size was calculated using Cochran's formula as 154. After accounting for potential non-responses, participants completed the survey, ensuring adequacy for statistical analysis. Data was entered into Microsoft Excel and analyzed using SPSS version 26. Categorical variables were summarized using frequencies and percentages, and a p-value < 0.05 was considered statistically significant.

Data Collection and Scoring

A structured questionnaire was developed to assess KAP. The questionnaire was available in English and included the following sections:
Divided into four sections:
Section A: Demographics
Section B: 20 knowledge questions
Knowledge Scoring (20 Questions); Each correct answer = 1 point (Total score = 20) Cut-offs: Good knowledge: ≥ 70% (≥14), Moderate knowledge: 50–69% (10–13), Poor knowledge: <10
Section C: 11 attitude questions Responses: Strongly Agree = 5;Strongly Disagree= 1 Cut-offs: Positive attitude: ≥ 8/11, Neutral attitude: 5–7/11, Negative attitude: <5/11
Section D: 6 practice questions (Yes = 1 No = 0), Cut-offs : Good practice: ≥4 , Poor practice: <4

RESULTS

Demographics

A total of 154 healthcare professionals participated in the study. Participants included postgraduate trainees, medical and paramedical staff. Table 1 summarizes demographic characteristics of study participants.

Knowledge

Graph 1 depicts the distribution of correct responses to knowledge based questions. Overall participants demonstrated high knowledge , with majority scoring above 80% in most items. About 85.7% participants demonstrated good knowledge (> 70% score).

Attitude

Table 2 summarizes the attitude responses. Participants showed an overwhelmingly positive attitude toward HPV vaccination. Overall 83.9 % participants demonstrated a positive attitude.

Practice

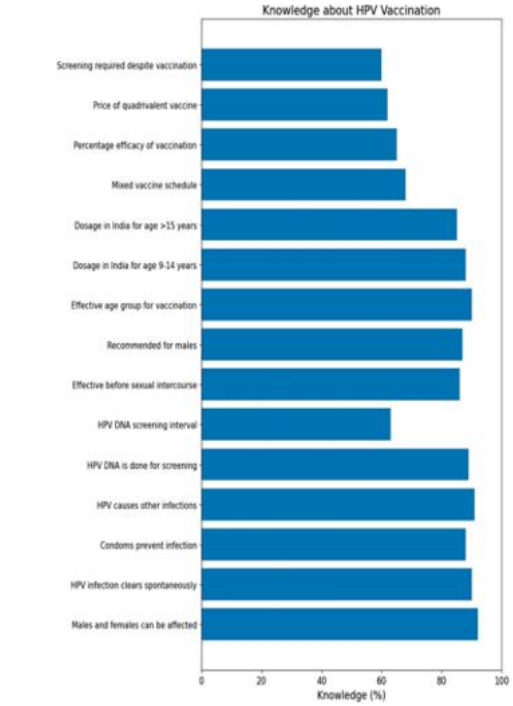
Table 3 summarizes the practices. Table 4 shows the gender vaccination gap . Practice indicators demonstrated a gap between knowledge and implementation. Graph 2 shows , 30.5% have received the vaccination, and only 39.1% participants demonstrated good practice (> 4 correct practice behaviors) . Amongst 93 female participants 39 of them are completely vaccinated. As shown in Graph 3 , Doubtful efficacy , fear of side effects and cost were identified as the major barriers.

Graph 4 shows comparison between knowledge, attitude and practice. "Although knowledge (85.7%) and attitude (83.9%) toward HPV vaccination were high among healthcare professionals, good vaccination practice was observed in only 39.1% of participants, highlighting a significant knowledge–practice gap."

Table 1 (Demographics)

TABLE 1: DEMOGRAPHIC CHARACTERISTICS OF STUDY PARTICIPANTS (N = 154)

Variable	Category	n	%
Age Group	18–30 years	111	72.1
	>30 years	43	27.9
Gender	Male	61	39.6
	Female	93	60.4
Profession	Postgraduate	98	63.6
	Medical & Paramedical Staff	56	36.4



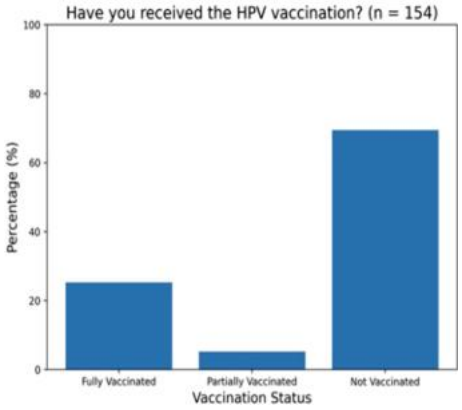
Graph 1

Table 2 (Attitude)

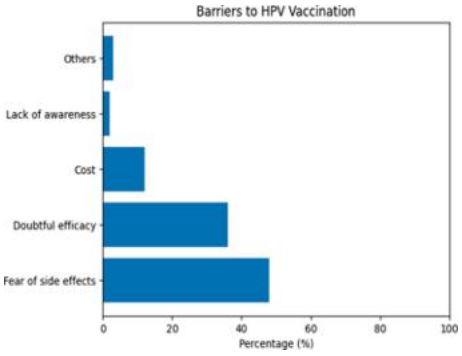
TABLE: ATTITUDE TOWARDS HPV VACCINATION AMONG STUDY PARTICIPANTS (N = 154)

Statement	% Agreeing
HPV vaccination is an effective method of preventing cervical cancer	95.2
HPV vaccine is safe	91.4
Boys should also be vaccinated	82.2
HPV vaccination decreases fertility	29.0
Can be given even if not sexually active yet	90.8
Should be included in National Immunization Programme	94.6
Cost is a major barrier to HPV vaccination	78.5
Doctors play a critical role in elimination of cervical cancer	92.6
Doctors should be role models for vaccination	95.6
Would recommend HPV vaccination to others	90.4
Confident in counseling patients about HPV vaccination	82.4

Figure: HPV Vaccination Status (n = 154)



Graph 2 (Vaccinated Population)



Graph 3 (Barriers For Vaccination)

Table 3 (Practice)

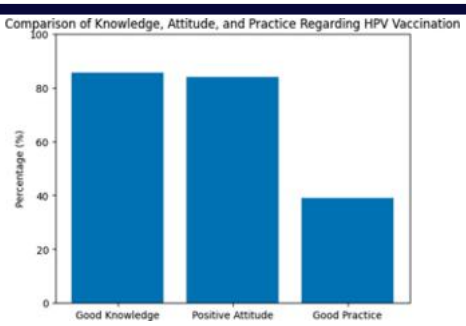
Table: Practice Variables Related to HPV Vaccination (n = 154)

Practice Variable	Yes (n)	Yes (%)
HPV vaccination received (Fully vaccinated)	39	25.32
Partially vaccinated	8	5.19
Recommended the vaccine to others	121	78.57
Willing to get vaccination in future	82	53.25
Discussed with friends and family	69	44.81
Attended seminars	42	27.27

Table 4

Table: Practice Variables (n = 154)

Variable	Category	n	%
Vaccination	Yes	47	30.52
Gender	Female	47	30.52
	Male	0	0.00



Graph 4

DISCUSSION

HPV vaccination plays a crucial role in the prevention of cervical cancer and other HPV-related malignancies. In our study involving 154 healthcare providers, we assessed knowledge, attitude, and practices (KAP) regarding HPV vaccination using a structured and validated questionnaire. In our study, participants showed strong knowledge in areas such as HPV transmission, the causal role of HPV in cervical cancer, vaccine safety, recommended vaccination age, and need for screening after vaccination. However, moderate knowledge was observed for condom efficacy, HPV DNA testing intervals, and dose schedules for women above 15 years.

Poor knowledge was noted in understanding mixed vaccination schedules and vaccine cost awareness. Similarly, Canon et al. (2017) from India reported that although physicians were aware of HPV infection, only half had comprehensive knowledge of vaccine schedules[7] — correlating closely with our observations.

In our study, the attitude toward HPV vaccination was overwhelmingly positive, with 83.9% of participants showing favorable attitudes. Most respondents agreed that HPV vaccination is safe, effective, and essential for preventing cervical cancer. This aligns with findings by Almazrou et al. (2020), where 58– 61% of Saudi physicians demonstrated strong positive attitudes toward vaccination[8] and agreed on its importance in cancer prevention.

Despite good knowledge and positive attitudes, the practice component showed notable deficiencies, with only 39.07% of participants demonstrating good practice. Inconsistent recommendation during routine consultation, insufficient self-vaccination, and hesitation due to perceived barriers contributed to poor practice scores. This gap between knowledge and practice mirrors the findings of Rosen et al.

(2018) and Daley et al. (2010), who reported that even when clinicians possess adequate knowledge, actual vaccine recommendation rates remain suboptimal due to practical constraints such as time limitations, parental concerns, and vaccine cost perceptions[9 10]. Gender also influenced knowledge and attitude, with female participants showed comparatively higher scores.

Cost and misconception related to sexuality were identified as major barriers consistent with global studies[9]. French and Qatari studies cited cost and misconceptions related to sexuality as key reasons for low uptake. Uncertainty regarding vaccine schedules, which has been repeatedly reported in various international studies, indicating the need for structured training programs[11].

Evidence from large-scale reviews further supports the effectiveness of HPV vaccination programs. A National Institutes of Health (NIH) - supported analysis has demonstrated significant reductions in HPV infection rates, genital warts, and cervical intraepithelial neoplasia following vaccine implementation[12]. Similarly, a Cochrane systematic review confirmed that HPV vaccines are highly effective in preventing high-grade cervical lesions, particularly when administered prior to exposure to HPV infection[13].

Overall, our study findings strongly correlate with global literature: clinicians are generally well informed and positive about HPV vaccination but demonstrate poor implementation in practice. Strengthening CME modules, ensuring easy vaccine availability, reducing cost burden, and incorporating HPV vaccination counselling into routine workflow can help bridge this gap.

CONCLUSION

The study demonstrates good knowledge and very positive attitude towards HPV vaccination among healthcare providers; however, actual practice remains inadequate. Addressing cost barriers, improving patient awareness, and providing clearer vaccination guidelines are essential steps in bridging the knowledge–practice gap.

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