Journal of Rare Cardiovascular Diseases
ISSN: 2299-3711 (Print) | e-ISSN: 2300-5505 (Online)
www.jrcd.eu
RESEARCH ARTICLE

Knowledge, Attitudes, and Behaviour (KAB) of Working Women Aged 30 and Above Regarding HPV Infection and Vaccination

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Article History
Received: 11.09.2025
Revised: 29.09.2025
Accepted: 15.10.2025
Published: 29.11.2025

Abstract: ***Introduction:*** Human papillomavirus (HPV) is a common sexually transmitted infection and a leading cause of cervical cancer. Adult female HPV vaccination uptake is still low, despite the fact that the vaccine can dramatically lower the risk of cervical cancer. Improving public health interventions requires an understanding of women aged ≥30 years' knowledge, attitudes, and behaviour (KAB) regarding HPV infection and vaccination. Therefore, we plan to evaluate working women aged 30 and above knowledge, attitudes, and behaviour about HPV infection and vaccination.***Methodology:*** A hospital-based cross-sectional study was conducted among working women aged ≥30 years using a structured questionnaire. Sociodemographic information, self-reported vaccination history, attitudes towards vaccination, and knowledge of HPV and its vaccine were gathered. Chi-square tests and descriptive statistics were employed to examine correlations.***Results:*** The participants average age was 35.7 years. 57% of the sample lived in an urban area and 48.94% had completed at least an undergraduate degree. Only 52.13% of respondents knew about high-risk types of HPV, despite 64.89% being aware that the virus causes cervical cancer. Just 36.88% of participants thought men should have the HPV vaccine, compared to the majority (64.18%) who thought it was vital for women. Only 26.95% of people had finished the entire HPV vaccination course in spite of this. Vaccination uptake was substantially correlated with higher education and prior screening history (p=0.02). Side effects and scepticism regarding the need for further screening after vaccination were frequent worries.***Conclusion:*** Actual vaccination rates among women aged ≥30 years were low, despite generally high awareness and attitudes about HPV vaccination. Lack of access and misconceptions were the main obstacles. To increase vaccine uptake in this population, targeted education, funding, and proactive involvement of healthcare providers are required.

Keywords: Human papillomavirus (HPV), Cervical cancer, Working women, HPV Vaccine, Preventive healthcare.

INTRODUCTION

One of the most prevalent STDs in the world is the human papillomavirus, or HPV. Over 75% of sexually active individuals will at some point in their lives have contracted at least one form of HPV [1]. Certain HPV strains, particularly HPV-16 and HPV-18, have the ability to persist in the body and cause cancer. More than 99 percent of occurrences of cervical cancer are caused by these high-risk types[2,3]. Cervical cancer is a leading cause of death and the fourth most frequent malignancy in women globally. Regretfully, almost 2,30,000 women in India alone lose their lives to cervical cancer each year [4,5].

Evidence from around the world clearly indicates that HPV vaccination will lower the incidence, morbidity, death, and expenses related to cervical cancer. The HPV vaccine's acceptability in India remains contentious because of its high cost, stigma, lack of awareness, safety issues, and efficacy issues. Four tribal women were dying as a result of unfavourable occurrences in the HPV vaccination project run by a worldwide non-governmental organisation in Andhra Pradesh in 2010, which brought attention to the safety concerns associated with the vaccine. [6] Due to unfavourable media portrayal, the majority of Indians still think that vaccines would have major side effects, even when study reports indicate that deaths are not linked to the HPV vaccine. [7].

The cost of the vaccine, which is not covered by the regular immunisation program, is a major factor in its acceptability in middle-income nations like India. Three doses of the HPV vaccine cost 12,000 Indian rupees. India's average yearly per capita income from 2017 to 2018 was 1,36,405 dollars. The cost of HPV vaccination must be approximately 11.4% of yearly income[8]. The cost of vaccination will be lessened if HPV vaccine is included in regular immunisation programs. Due to a lack of knowledge and accessibility regarding the screening program, the majority of cervical cancer cases in India were reported at an advanced stage [9]. Although it will lower the rate of cervical cancer detection, the HPV vaccine cannot replace cervical cancer screening [10].

It's necessary to know the attitudes and knowledge of working women over 30 regarding HPV and the vaccine. Understanding their attitudes, behaviours, and beliefs can assist health professionals in developing more effective immunisation and education programs. The purpose of this study was to evaluate women aged 30 and older's knowledge, attitudes, and behaviours (KAP) on HPV and its vaccine [11].

MATERIALS AND METHODS

A cross-sectional hospital-based study with the help of questionnaire was conducted in the Department of Microbiology. The study was carried out over a period of four months. Working women aged 30 years and above who attended the OBG OPD for any reason during the study period were the study population

Sample Size and Sampling Method: A total of 282 women were selected for the study using convenience sampling.

Inclusion & Exclusion Criteria:

Working Women aged 30 years and above those who are attending the OBG OPD during the study period and were willing to participate and provide written informed consent were included.

Non-working women and also women those who are already diagnosed with cervical cancer, women who were pregnant (to avoid bias related to vaccination advice during pregnancy), Women with mental or cognitive impairment that could interfere with understanding and answering the questions were excluded.

Data Collection Procedure:

A systematic questionnaire was used to gather data, and depending on the participant's literacy level, it was either given through in-person interviews or self-completion. Three components comprised the questionnaire:

1. Socio-demographic information – age, education, occupation, income, marital status, and area of residence
2. Knowledge – awareness of HPV, its link to cervical cancer, and knowledge of the HPV vaccine
3. Attitudes and Behaviour – beliefs about the vaccine, willingness to take it, vaccination history, and reasons for acceptance or refusal

The goal of the study was explained to the participants before data collection began. All participants provided written informed consent. Confidentiality and privacy were upheld during the entire study.

Ethical Considerations:

The study was approved by the Institutional Ethics Committee. ICE No: SSSMCRI: IEC: 930/ 2024.

RESULTS AND OBSERVATIONS:

The mean age of the 420 women who were ≥30 years old and took part in the study was 35.7 years (SD ± 3.4). Most lived in cities (57.09%), with the remainder coming from suburbs or rural areas (42.91%). In terms of marital status, 21.9% were single, 9.93% were divorced or widowed, and 68.09% were married. In terms of education, 36.88% held postgraduate degrees and 48.94% had finished undergraduate courses. Only primary was nil and secondary (14.18%) education was held by a lesser percentage. In terms of occupational status, we focused on working women for this study. (Table 1)

Out of 282 women, 243 (86.1%) were aware that HPV is a sexually transmitted disease and 82.9% of the participants known that, HPV infects both men and women. But only 64.89% were aware of HPV causing Cervical cancer. The women those who correctly acknowledged HPV-16 and 18 as high-risk strains that cause cervical cancer were only 50.5%. 76.9% of people were aware that there were HPV vaccines available, and 67% were aware of how many doses were needed. Only 49% of respondents accurately recognised that a Pap smear is still required after vaccination. Education ($p<0.001$) and previous exposure to health education ($p<0.05$) were substantially correlated with overall knowledge scores. Only 36.8% of participants felt that men should receive the HPV vaccine, whereas the majority (74.1%) thought it was necessary for women. Side effects from vaccines were a common concern (47.87%). About 71.99% of respondents said they would suggest the vaccination to friends and relatives. 68.79% were neither immunised nor planned to be vaccinated, and just 26.95% had finished the entire course of vaccinations. The likelihood of vaccination was higher among women with greater education and a history of screening ($p=0.02$). Vaccine uptake remained low despite positive attitude scores. (Table 2)

Table 1: Demographic Characteristics of Study Participants

Characteristic	Category	Frequency (n=282) (Percentage)
Age (Years)	30–34	99 (35.11%)
	35–39	76 (26.95%)
	≥40	109 (37.94%)
Residence	Urban	161 (57.09%)
	Suburban/Rural	121 (42.91%)
Marital Status	Married	192 (68.09%)
	Single	62 (21.99%)
	Divorced/Widowed	28 (9.93%)
Educational Qualification	Primary School or Below	0 (0)
	Secondary School	40 (14.18%)
	Undergraduate Degree	138 (48.94%)
	Postgraduate and above	104 (36.88%)
Occupation	Employed	282 (100%)

Table 2: Correlation of Knowledge, Attitudes, and Behaviour of HPV infection and Vaccination

Domain	Variable	Frequency (%)
Knowledge	Aware HPV is a sexually transmitted disease	86.17
	Know HPV infects both men & women	82.98
	Aware HPV causes cervical cancer	64.89
	Know HPV causes vulvar, vaginal, and anal cancers in women	76.95
	Know HPV-16/18 are high-risk strains	52.13
	Know HPV vaccine is primarily targeted in the age group between 9 and 14 years	53.90
	Know HPV vaccine protects against cervical cancer and genital warts	76.9
	Know number of HPV vaccine doses	67.02
	Know vaccine doesn't eliminate Pap smear	48.94
	Know HPV vaccine offers >90% of efficacy	75.89
Attitude & Behavior	HPV vaccine is important for women	74.1
	HPV vaccine is important for men	36.88
	Concerned about side effects	47.87
	Would recommend to others	71.99
	HPV vaccine recommendation after detection of precancerous lesions	42.91
	HPV vaccine is not recommended in pregnant women	21.99
	Think it encourages risky behavior	32.18
	Completed full HPV vaccination	25.89
	A recommendation in the appropriate age group	29.08
	Adherence towards standard dosing schedule	26.95
	Currently undergoing vaccination	2.8
	Scheduled for vaccination (6 months)	1.41
	Not vaccinated/not scheduled	68.79

This study analysed working women of age 30 years and above and their knowledge, attitudes, and behaviour (KAB) regarding HPV infection and vaccination. Vaccination rates were remarkably low, despite the fact that most respondents had moderate knowledge and good attitudes, suggesting a disconnect between awareness and preventive action.

Knowledge scores and education level were significantly correlated ($p < 0.001$), supporting global trends. For example, a multicentre study in Ethiopia found that women with a university degree were far more likely to be knowledgeable about HPV and to be eager to vaccine others as well as themselves [12].

Nearly 243 participants were aware that HPV is a virus that transmit through sexual activities. Also, nearly 82.98% (234) were aware that HPV infect both men and women. This was similar to few other studies [10,11].

Just 52.13% of participants were able to identify high-risk HPV varieties, despite the fact that 64.89% of people correctly identified HPV as a cause of cervical cancer. This aligns with research conducted in South Asia and the Middle East, which found that while overall awareness of HPV ranged between 41% and 60%, deeper understanding of viral subtypes was significantly lower (20% to 45%) [13,14].

Furthermore, fewer than half of our participants were aware that Pap smear screening is still necessary after vaccination, suggesting the necessity for thorough education that not only introduces HPV vaccines but also places their limits and ongoing screening requirements in context [12].

Most people (74.1%) thought HPV vaccination was necessary for women, which is encouraging and comparable to the 75%–85% acceptance rate found in recent studies among Nigerian university students and urban women in China [15,16]. Only 36.88%, however, were in favour of male immunisation. Public health messaging frequently fails to convey the shared duty of HPV protection across sexes, as evidenced by this gender discrepancy, which has been documented elsewhere [17].

Only 26.95% of responders had finished the entire HPV vaccination course, despite having comparatively good attitude scores. This is somewhat similar to adult uptake rates in many low- and middle-income nations, where research has shown that among eligible women aged 25 and older, coverage can be as low as 10%. Adult immunisation rates for those aged 27 to 45 vary from 6.5% to 25.8%, even in the US [18].

Our results reflect earlier findings that vaccination uptake is highly correlated with past health screening habits and education ($p = 0.02$). A meta-analysis conducted in the Asia-Pacific area found that physician recommendation, prior Pap smear testing, and educational achievement were all reliable indicators of adult vaccination uptake [19].

A sizable fraction of individuals (68.79%) had not received nor intended to receive the vaccination. Financial limitations, unclear information from healthcare experts, and a low-risk perception are some of the interlocking hurdles that may be to blame for this. Research indicates that access and cost continue to be significant barriers worldwide, particularly for adult female populations not covered by the school-based vaccination program [20-22].

CONCLUSION

According to this study, a large percentage of working women over 30 knew a little bit about HPV and thought the vaccine was crucial. But less than one in four had been fully vaccinated against HPV. Higher-educated and previously screened women were more likely to have received a vaccination. There are still misconceptions regarding HPV and the vaccine, and many women are unaware that they still require Pap screenings after receiving the shot or are concerned about adverse effects. These disparities highlight the need for adult women to have greater access to the immunisation and better education. Increasing vaccination rates and protecting more women from cervical cancer can be achieved by raising awareness, cutting expenses, and urging medical professionals to discuss HPV with patients.

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