

Knowledge, Attitude, And Practice Regarding Cervical Cancer Screening and HPV Vaccination Among Women/Health PersonnelPedduri Sushma¹, Veneela Pasupuleti², Rita Ekka³¹Assistant Professor, Department of Obstetrics and gynaecology, Father Columbo Institute of Medical Sciences, Hanamkonda.²Assistant Professor, Department of Obstetrics and gynaecology, MNR Medical College, Sangareddy.³Associate Professor, Department of Obstetrics and gynaecology, Kamineni Institute of Medical Sciences, Narketpally.

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Conflict of interest: Nil

Abstract:**Background:** Cervical cancer (CC) is largely preventable through regular screening and HPV vaccination, yet awareness and utilization remain inadequate in many settings.**Aim:** To assess the knowledge, attitude, and practice regarding CC screening and HPV vaccination among women and health personnel.**Methods:** This prospective hospital-based study was conducted in the department of Obstetrics and Gynaecology, Kamineni Institute of Medical Sciences, Narketpally, from September 2025 to March 2026. A total of 240 participants, including 160 women and 80 health personnel, were enrolled using a structured pretested questionnaire. Data on sociodemographic details, knowledge, attitude, and preventive practice were collected and analysed using SPSS version 22.0. Chi-square test, Fisher's exact test, logistic regression, and correlation analysis were applied.**Results:** Health personnel had significantly better awareness of CC, Pap smear, HPV infection, and HPV vaccination than women. Positive attitude towards screening and vaccination was also higher among health personnel. However, actual practice remained poor in both groups. Only a small proportion of women and health personnel had undergone Pap smear screening or received HPV vaccination.**Conclusion:** Despite relatively favourable awareness and attitude, preventive practices were inadequate. Focused education, counselling, and institution-based screening and vaccination strategies are essential.**Keywords:** Cervical Cancer, Pap Smear, HPV Vaccination, Knowledge Attitude Practice, Health Personnel.**DOI:** 10.25258/ijpqa.17.6.8

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Introduction

Persistent infection with high-risk human papillomavirus (HPV) is the necessary cause of nearly all cervical cancers (CCs), making HPV vaccination and regular screening the two most effective preventive strategies. Yet, prevention remains limited in many settings because women often have incomplete knowledge, variable risk perception, fear or embarrassment about screening, and poor awareness of vaccine benefits, while even health personnel may show gaps in screening uptake and vaccine recommendation practices [1, 2]. Recent evidence suggests that knowledge, attitude, and practice (KAP) regarding CC prevention are still suboptimal among both community women and healthcare workers, despite increasing public health attention to elimination strategies [1–3]. Understanding these gaps is important because women's awareness influences service utilization, and the attitudes of health personnel strongly affect

counselling, screening advocacy, and vaccine acceptance. The aim of the present study was to assess the knowledge, attitude, and practice regarding CC screening and HPV vaccination among women and health personnel, and to identify areas that require targeted educational and behavioural interventions.

Methods

This prospective, hospital-based research was conducted in the department of Obstetrics and Gynaecology, Kamineni Institute of Medical Sciences, Narketpally, from September 2025 to March 2026, after obtaining approval from the Institutional Ethics Committee. The study was carried out among eligible women attending the obstetrics and gynaecology outpatient department, inpatient wards, antenatal clinics, and immunization or preventive health services, as well as among

health personnel working in the same institution. Women aged 18 years and above who were willing to participate and able to provide informed consent were included. Individuals who were unwilling to participate, seriously ill at the time of interview, or unable to comprehend the questionnaire were excluded. A structured, predesigned, and pretested questionnaire was used as the study instrument. The questionnaire consisted of four sections covering sociodemographic details, knowledge regarding CC, screening methods and HPV vaccination, attitude towards screening and vaccination, and actual preventive practices such as previous screening uptake, vaccine acceptance, counselling, and recommendation behaviour.

The questionnaire was developed in simple English and translated into the local language wherever necessary to ensure clarity and uniform understanding. Prior to commencement of the main study, a pilot assessment was performed on a small subset of participants to evaluate feasibility, wording, and internal consistency; these participants were not included in the final analysis. Data were collected by direct face-to-face interview in a confidential setting after obtaining written informed consent. For health personnel, the questionnaire was administered during duty breaks or designated academic hours so that routine services were not disturbed. For women participants, data were obtained during their visit to the outpatient department or inpatient stay after ensuring privacy and comfort. The knowledge component included awareness of CC risk factors, symptoms, screening tests such as Pap smear and HPV testing, recommended screening intervals, and the role of HPV vaccination. The attitude component assessed perceived susceptibility, acceptability of screening, willingness for vaccination, and readiness to recommend preventive measures. Practice assessment included history of prior CC screening, uptake or intention for HPV vaccination, and, among health personnel, counselling and referral practices. Each correct knowledge response was awarded one mark and incorrect or "don't know" responses were scored zero. Based on the total score, knowledge levels were categorized as poor, moderate, or good using predefined cut-off values. Attitude and practice variables were similarly grouped for meaningful interpretation.

The collected data were entered into Microsoft Excel for coding and cleaning and were analysed using SPSS software version 22.0. Continuous variables such as age and years of service were presented as mean \pm standard deviation or median with interquartile range depending on data distribution. Categorical variables such as

educational status, marital status, occupation, awareness of screening, vaccine acceptability, and screening practice were expressed as frequencies and percentages. The comparison of proportions between women and health personnel, and between subgroups within each category, was performed using the chi-square test or Fisher's exact test wherever appropriate. The association between sociodemographic characteristics and levels of knowledge, attitude, and practice was evaluated using chi-square test for trend and binary logistic regression analysis. Odds ratios with 95% confidence intervals were calculated to identify factors independently associated with adequate knowledge, positive attitude, and good preventive practice. Correlation between knowledge, attitude, and practice scores was assessed using Pearson's or Spearman's correlation coefficient based on the normality of data. $P < 0.05$ was considered statistically significant.

Results

A total of 240 participants were studied, including 160 women and 80 health personnel. The mean age of the overall study population was 31.1 ± 7.8 years. Most participants were in the 21–30 years age group (48.3%). Married individuals constituted 66.7% of the study population, and graduates or above accounted for 55.8%. Knowledge regarding CC prevention was significantly better among health personnel than among women. Awareness of CC was noted in 61.3% of women compared to 97.5% of health personnel ($\chi^2=33.84$, $P < 0.001$). Likewise, awareness of Pap smear, HPV infection, and HPV vaccination was significantly higher among health personnel, with all comparisons showing $P < 0.001$. Adequate overall knowledge was present in only 36.3% of women versus 85.0% of health personnel. Attitude towards prevention was comparatively favourable, though still lower among women. Screening was considered necessary by 70.0% of women and 95.0% of health personnel ($\chi^2=18.92$, $P < 0.001$). Positive overall attitude was observed in 63.8% of women and 91.3% of health personnel. Despite this, actual practice remained unsatisfactory. Only 21.3% of women and 35.0% of health personnel had ever undergone Pap smear screening ($\chi^2=5.16$, $P=0.023$). HPV vaccination uptake was especially low, reported by 7.5% of women and 17.5% of health personnel ($\chi^2=5.56$, $P=0.018$). Good overall practice was significantly higher among health personnel (47.5%) than women (17.5%) ($\chi^2=23.41$, $P < 0.001$), indicating a substantial gap between awareness, attitude, and implementation.

Table 1: Baseline characteristics of the study participants

Variable	Women (n=160)	Health personnel (n=80)	Total (n=240)
Age (years), mean \pm SD	31.8 \pm 8.4	29.6 \pm 6.2	31.1 \pm 7.8
18–20 years	18 (11.3%)	6 (7.5%)	24 (10.0%)
21–30 years	72 (45.0%)	44 (55.0%)	116 (48.3%)
31–40 years	46 (28.8%)	20 (25.0%)	66 (27.5%)
>40 years	24 (15.0%)	10 (12.5%)	34 (14.2%)
Married	118 (73.8%)	42 (52.5%)	160 (66.7%)
Graduate and above	54 (33.8%)	80 (100%)	134 (55.8%)

Table 2: Knowledge regarding cervical cancer screening and HPV vaccination

Knowledge variable	Women	Health personnel	χ^2 value	P value
Heard of cervical cancer	98 (61.3%)	78 (97.5%)	33.84	<0.001
Aware of Pap smear	74 (46.3%)	76 (95.0%)	54.26	<0.001
Aware of HPV infection	52 (32.5%)	72 (90.0%)	69.41	<0.001
Aware of HPV vaccine	48 (30.0%)	70 (87.5%)	67.82	<0.001
Adequate overall knowledge	58 (36.3%)	68 (85.0%)	49.76	<0.001

Table 3: Attitude towards cervical cancer screening and HPV vaccination

Attitude variable	Women	Health personnel	χ^2 value	P value
Felt screening is necessary	112 (70.0%)	76 (95.0%)	18.92	<0.001
Willing to undergo/recommend Pap smear	104 (65.0%)	74 (92.5%)	20.81	<0.001
Willing to accept/recommend HPV vaccine	96 (60.0%)	72 (90.0%)	22.73	<0.001
Believed early detection improves outcome	118 (73.8%)	78 (97.5%)	19.44	<0.001
Positive overall attitude	102 (63.8%)	73 (91.3%)	20.36	<0.001

Table 4: Practice regarding cervical cancer screening and HPV vaccination

Practice variable	Women	Health personnel	χ^2 value	P value
Ever undergone Pap smear	34 (21.3%)	28 (35.0%)	5.16	0.023
Received at least 1 dose of HPV vaccine	12 (7.5%)	14 (17.5%)	5.56	0.018
Counselled others on screening/vaccination	26 (16.3%)	62 (77.5%)	85.94	<0.001
Good overall practice	28 (17.5%)	38 (47.5%)	23.41	<0.001

Discussion

The present study demonstrated a clear gradient between women and health personnel with respect to KAP regarding CC screening and HPV vaccination. Although awareness and positive attitude were substantially higher among health personnel, actual preventive practice remained unsatisfactory in both groups. Among women, only about one-third had adequate knowledge, nearly two-thirds showed a positive attitude, but only one-fifth had ever undergone Pap smear screening and less than one-tenth had received HPV vaccination. This pattern suggests that awareness alone did not translate into action. Similar gaps have been described in recent Indian literature, where awareness of CC and Pap smear tends to be moderate or even acceptable in selected institutional populations, yet screening uptake and vaccination remain much lower than expected. A 2023 Indian tertiary-care report noted that even at higher-level facilities, the 70% screening coverage target proposed under elimination strategies had not been achieved, underscoring that service availability by itself does not guarantee utilization [4]. Recent Indian reviews and implementation analyses have

likewise emphasized that the national challenge is no longer only whether women have heard of CC, but whether they can access, accept, and act on preventive services in real-life settings [5–8].

The relatively low knowledge levels among women in our study are consistent with evidence from Indian community and rural settings. In rural Mysore, Coursey et al. found that only 17.9% of young women had heard of CC and only 2.7% knew about the HPV vaccine before education, showing how limited baseline awareness can be outside organized academic environments [9]. Likewise, recent Indian awareness studies among girls and women have continued to identify important deficiencies in understanding of cervical screening, HPV transmission, and vaccine eligibility [10]. Our finding that women had poorer knowledge than health personnel is expected, but the extent of this difference is noteworthy because women attending an obstetrics and gynaecology department might be assumed to have better exposure to reproductive health information. This indicates missed opportunities for opportunistic counselling during outpatient visits, antenatal care, and postnatal contacts. The observed association between

education and knowledge in our study is also supported by Indian screening data showing that formal education, better socioeconomic position, and reduced fear of judgement are linked to higher screening uptake or testing behaviour [11]. Thus, the low knowledge among women in the present study likely reflects both social disadvantage and inadequate routine provider-driven education.

Health personnel in our study performed better on knowledge and attitude indicators, yet their own screening and vaccination practices were still suboptimal. This is one of the most important findings because healthcare workers are expected not only to protect themselves but also to function as information multipliers for patients and the wider community. The pattern observed here closely mirrors Indian hospital-based studies. In Chennai, Chellapandian et al. reported that although 90.6% of health professionals were aware of CC, only 29.2% had undergone screening and 19.8% had received HPV vaccination, while willingness to vaccinate and recommend vaccination remained much higher than actual uptake [12]. Mandal et al. similarly observed in young female doctors and nursing personnel that awareness was better than practice, indicating a persistent knowledge-practice gap even among first-contact healthcare providers [13]. More recent Indian studies among healthcare professionals and medical personnel in 2025 have reinforced the same message: many professionals recognize their preventive role, but fewer consider vaccination essential for themselves or consistently translate knowledge into behaviour [14, 15]. Therefore, our results do not represent an isolated institutional problem; rather, they fit a broader Indian pattern in which professional awareness is necessary but insufficient unless coupled with institutional reminders, affordable access, and workplace vaccination/screening programs.

The attitude findings in the present study were more encouraging than the practice findings. A majority of women believed screening was necessary and expressed willingness to undergo screening or accept vaccination, while an even larger proportion of health personnel showed positive attitudes. This suggests that the main barrier may not be attitudinal resistance alone. Indian studies increasingly show that willingness can be improved further through focused education. Verma et al. in 2024 demonstrated that a health education intervention improved awareness and willingness regarding CC prevention among female healthcare students, indicating that educational exposure can rapidly shift perceptions in a favourable direction [16]. Similarly, Ray et al. reported measurable demand and willingness to pay for HPV vaccination among mothers of adolescent daughters, suggesting that acceptance exists when people understand the value of vaccination and perceive it as feasible [17]. The

mixed-methods study from rural Mysore further showed that family support, peer influence, cost, and vaccination location strongly shaped likelihood to vaccinate, highlighting that attitude is socially embedded rather than purely individual [9]. These observations help explain our findings: participants may endorse screening and vaccination conceptually, but practical decision-making is influenced by family approval, affordability, trust in public systems, and peer norms. Hence, programmes that only deliver information without addressing family engagement, community trust, and cost may improve attitude scores without producing the desired behavioural change.

The poor preventive practice documented in our study deserves special attention because it ultimately determines disease prevention. Pap smear uptake was low in both groups, and HPV vaccination coverage was particularly poor. Indian evidence indicates that such low practice is driven by both demand-side and supply-side barriers. Reviews led by Indian investigators have shown that lack of awareness, embarrassment, fear, stigma, limited affordability, and distance or inconvenience remain major barriers to screening uptake in low-resource settings [8]. In addition, a 2024 study from Pondicherry highlighted supply-side weaknesses at primary health centres, including infrastructure deficits, training limitations, referral gaps, and data-system shortcomings that can weaken CC screening and management [7]. The importance of frontline workers is also evident: a recent study among ASHAs in Odisha assessed their own screening behaviour and identified the need to strengthen both their personal practice and their community-facing role in promoting cancer screening [18]. The implication for our study setting is that low practice among women may reflect hesitancy, insufficient counselling, and system friction simultaneously, while low practice among health personnel may reflect workload, low perceived personal risk, and absence of formal institutional preventive programmes. Thus, converting awareness into action requires a dual strategy: making services easier to access and making preventive behaviour a normalized part of routine women's healthcare and staff health services.

From a public health perspective, our findings strongly support targeted, multi-level interventions within tertiary-care teaching institutions. Recent Indian work on HPV vaccine introduction in Sikkim demonstrated that very high vaccination coverage can be achieved when political commitment, intersectoral coordination, social mobilization, and school-linked delivery are combined effectively [19]. Broader Indian reviews on adult vaccination and CC elimination have also argued that the coming phase of prevention in India should move beyond isolated awareness campaigns toward organized,

affordable, and system-supported vaccination and screening pathways [5, 20]. South Asian implementation reviews further suggest that successful screening programmes require context-specific delivery models, task-sharing, follow-up mechanisms, and local adaptation rather than one-size-fits-all strategies [6]. Based on the present study, practical steps, we would include regular counselling at OBG contacts, screening counselling checklists, opportunistic referral for eligible women, periodic orientation of doctors and nurses, staff-targeted HPV vaccine awareness sessions, and possibly institutional screening and vaccination drives. The gap between knowledge and practice in our results indicates that the institution already has a receptive base on which to build. If awareness among women is improved and health personnel are enabled to model preventive behaviour themselves, the department can become an effective hub for CC prevention. Overall, the present study adds to emerging Indian evidence that the central challenge is not merely awareness generation, but the conversion of acceptable knowledge and positive attitude into sustained screening uptake and vaccine acceptance through organized behavioural and health-system interventions.

Conclusion

The present study showed that knowledge, attitude, and practice regarding CC screening and HPV vaccination were better among health personnel than women attending the OBG department, but actual preventive practice remained inadequate in both groups. Although many participants recognized the importance of screening and vaccination, Pap smear uptake and HPV vaccine acceptance were still low. This gap between awareness and action highlights the need for regular health education, opportunistic counselling, and institution-based preventive programmes. Strengthening provider training, improving access to screening services, and promoting HPV vaccination through targeted interventions may help improve early prevention of CC in this population.

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