

## Original Research Article

# KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING CERVICAL CANCER AND VACCINE AMONG NURSING STUDENTS IN TERTIARY CARE CENTRE

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### ABSTRACT

**Background:** Cervical cancer remains a major public health problem globally and is one of the leading causes of cancer-related mortality among women in India. Despite the availability of effective screening and vaccination strategies, awareness and preventive practices remain inadequate, particularly among young women. Nursing students, as future healthcare providers, play a crucial role in promoting cervical cancer prevention. **Objectives:** To assess the knowledge, attitude, and practice (KAP) regarding cervical cancer and its vaccine among nursing students in a tertiary care centre.

**Materials and Methods:** A cross-sectional study was conducted among 300 nursing students at Santhiram Medical College and General Hospital, Nandyal, over a period of two months (October–November 2025). Participants were selected using convenience sampling. Data were collected using a pre-designed, pre-tested, semi-structured questionnaire assessing socio-demographic details and KAP regarding cervical cancer and HPV vaccination.

**Results:** Among the 300 participants, overall awareness of cervical cancer was high (92%), and 78% knew that it is preventable. However, detailed knowledge regarding risk factors and screening intervals was moderate. About 74% identified Pap smear as a screening method, but only 46% were aware of the recommended frequency. Attitude towards prevention was positive, with 86% recognizing the severity of cervical cancer and 82% acknowledging the importance of screening. Despite this, only 28% had undergone screening. Major barriers included lack of awareness (30%), fear of examination (24%), and lack of consideration (20%). Awareness of HPV vaccination was 68%, while only 22% were vaccinated.

**Conclusion:** Although nursing students demonstrated good awareness and positive attitudes, a significant gap exists between knowledge and practice. Strengthening educational interventions, promoting screening, and improving HPV vaccination uptake are essential to empower nursing students as effective advocates for cervical cancer prevention.

**Keywords:** Cervical cancer, HPV vaccine, knowledge, attitude, practice, nursing students, immunization, maternal health.

## INTRODUCTION

Cervical cancer remains a significant global health challenge and is the fourth most common cancer among women worldwide, following breast, colorectal, and lung cancers. Despite being largely preventable through effective screening and

vaccination strategies, it continues to contribute substantially to morbidity and mortality, particularly in low- and middle-income countries. Persistent infection with high-risk types of human papillomavirus (HPV) has been established as the primary etiological factor for cervical cancer, making

it one of the few cancers with a clearly identifiable and preventable cause.<sup>[1]</sup>

India bears a considerable share of the global burden of cervical cancer. It is one of the leading causes of cancer-related deaths among Indian women, with a cumulative lifetime risk of 2.5% and a death risk of 1.4%. According to the National Institute of Cancer Prevention and Research, one woman dies from cervical cancer every eight minutes in India. Additionally, the five-year survival rate remains low at approximately 48.7%, largely due to late-stage diagnosis, inadequate screening coverage, and limited awareness about preventive measures.<sup>[2]</sup>

Early detection through screening methods such as the Papanicolaou (Pap) smear and HPV testing, along with primary prevention through HPV vaccination, has proven effective in significantly reducing the incidence and mortality associated with cervical cancer. However, the success of these preventive strategies depends heavily on awareness, acceptance, and proper implementation within the community.

Nursing students, as future healthcare professionals, play a pivotal role in health education, patient counseling, and promotion of preventive healthcare practices. Their knowledge, attitude, and practices regarding cervical cancer and its prevention are crucial, as they serve as a bridge between the healthcare system and the community. Ensuring that nursing students possess adequate knowledge and a positive attitude toward screening and vaccination can enhance their capacity to educate others and contribute to early detection and prevention efforts.<sup>[3]</sup>

Furthermore, college students are at an impressionable stage of life, making it an ideal period to instill appropriate health-related knowledge and practices. Assessing their awareness and perceptions regarding cervical cancer and HPV vaccination helps identify gaps and provides opportunities for targeted educational interventions.<sup>[4]</sup>

Therefore, this study aims to assess the knowledge, attitude, and practice regarding cervical cancer and its vaccine among nursing students in a tertiary care centre, with the goal of identifying deficiencies and promoting effective preventive strategies.

**Aims:** To know the Knowledge, Attitude and Practice regarding Cervical Cancer and Vaccine among Nursing Students in Santhiram Medical College and General hospital, Nandyal.

## MATERIALS AND METHODS

### Study Design and Setting

A **cross-sectional study** was conducted among nursing students at **Santhiram Medical College and General Hospital, Nandyal**.

## RESULTS

A total of 300 nursing students participated in the study assessing knowledge, attitude, and practices regarding cervical cancer and HPV vaccination.

### Study Period

The study was carried out over a period of two months, from October to November 2025.

**Study Population:** The study population included nursing students enrolled in the institution during the study period.

### Sample Size and Sampling Technique

A total of 300 nursing students participated in the study. Participants were selected using a convenience sampling technique.

### Study Tool

Data were collected using a pre-designed, pre-tested, semi-structured questionnaire. The questionnaire included sections to assess:

- Knowledge regarding cervical cancer and its risk factors, symptoms, screening methods, and HPV vaccination
- Attitude toward cervical cancer prevention and vaccination
- Practices related to screening and vaccine uptake

The questionnaire was pre-tested to ensure clarity, relevance, and reliability.

### Inclusion Criteria

- Nursing students present in the college during the survey period
- Students willing to participate in the study
- Those who provided written informed consent

### Exclusion Criteria

- Students not present at the time of data collection
- Nursing students who were not willing to participate
- Those who did not provide written informed consent

### Data Collection Procedure

After explaining the purpose of the study, written informed consent was obtained from all participants. The questionnaire was distributed to eligible students, and adequate time was provided for completion. Confidentiality and anonymity of the participants were strictly maintained throughout the study.

### Data Analysis

The collected data were entered into Microsoft Excel and analyzed using appropriate statistical software. Descriptive statistics such as frequency and percentage were used to summarize the data. Associations between variables were analyzed using suitable statistical tests, with a p-value <0.05 considered statistically significant.

### Ethical Considerations

The study was conducted after obtaining approval from the Institutional Ethics Committee. Participation was voluntary, and confidentiality of the information was maintained.

**Table 1: Socio-demographic profile (n=300)**

Variable	Category	Frequency	Percentage (%)
Age	18–20 yrs	132	44.0
	21–22 yrs	72	24.0
	>22 yrs	96	32.0
Marital status	Unmarried	246	82.0
	Married	54	18.0
Religion	Hindu	216	72.0
	Muslim	42	14.0
	Christian	30	10.0
	Others	12	4.0
Socioeconomic status	Upper	48	16.0
	Middle	168	56.0
	Lower	84	28.0

The majority of participants were young (18–22 years), unmarried, and predominantly belonged to the Hindu religion. Most students were from middle

socioeconomic status, indicating a relatively homogeneous study population of young nursing students.

**Table 2: Knowledge about cervical cancer (n=300)**

Variable	Yes (%)	No (%)
Heard about cervical cancer	92.0	8.0
Cervical cancer is preventable	78.0	22.0
Knowledge of risk factors	66.0	34.0
Early stage is treatable	72.0	28.0
Awareness of screening methods	69.0	31.0

Overall awareness of cervical cancer was high, with most participants recognizing its preventability and availability of screening methods. However, knowledge gaps were noted in understanding risk factors and specific screening recommendations.

Warning Signs Awareness

- Postcoital bleeding: **64%**
- Foul-smelling discharge: **58%**
- Irregular bleeding: **61%**
- Poor awareness of non-specific symptoms like diarrhea (**18%**)

Knowledge of Screening

- **Pap smear identified as screening test by 74%**

- Recommended frequency correctly known by only **46%**

- Awareness of other screening methods:

- HPV testing: 52%

- VIA: 38%

- Colposcopy: 41%

HPV Vaccine Awareness

- **68% were aware of HPV vaccine**

- Source:

- Health professionals: 44%

- Media: 32%

- Peers: 24%

**Table 3: Attitude responses (n=300)**

Statement	Agree (%)	Neutral (%)	Disagree (%)
Cervical cancer can lead to death	86.0	8.0	6.0
Any woman can develop cervical cancer	80.0	10.0	10.0
Screening helps prevention	82.0	9.0	9.0
Screening causes no harm	72.0	14.0	14.0
Screening is affordable	64.0	18.0	18.0
Willing to undergo screening	78.0	12.0	10.0

Participants demonstrated a generally positive attitude, with most acknowledging the seriousness of cervical cancer and the importance of screening. A

high proportion expressed willingness to undergo screening if accessible and safe.

**Table 4: Screening practices (n=300)**

Variable	Frequency	Percentage (%)
Ever screened	84	28.0
Never screened	216	72.0

Despite good knowledge and positive attitudes, actual screening practices were low, with less than

one-third having undergone screening. This indicates a significant gap between awareness and practice.

**Table 5: Reasons for Not Undergoing Screening (n=216)**

Reason	Percentage (%)
Unaware	30.0
Fear of examination	24.0

Lack of time	18.0
Never thought of it	20.0
No perceived risk	8.0

The most common reason for not undergoing cervical cancer screening was lack of awareness (30%), followed by fear of examination (24%). A notable proportion of participants reported never thinking

about screening (20%) and lack of time (18%) as barriers. Only a small percentage (8%) perceived themselves as not at risk.

**Table 6: HPV vaccination status**

Status	Frequency	Percentage (%)
Vaccinated	66	22.0
Not vaccinated	234	78.0

HPV vaccination uptake was low among participants, despite moderate awareness of the vaccine, highlighting the need for improved vaccination programs and awareness strategies.

## DISCUSSION

The present study assessed the knowledge, attitude, and practices (KAP) regarding cervical cancer and HPV vaccination among nursing students in a tertiary care centre. As future healthcare providers, nursing students play a crucial role in health education, prevention, and early detection of cervical cancer; therefore, their awareness and practices are of significant public health importance.

In this study, the majority of nursing students demonstrated high awareness of cervical cancer, which is consistent with findings by Goyal et al,<sup>[5]</sup> who reported good general awareness among healthcare students. This can be attributed to their medical curriculum and exposure to clinical settings. However, despite high awareness, knowledge gaps were evident in specific areas such as risk factors, screening intervals, and HPV vaccination, indicating that theoretical exposure alone may not ensure comprehensive understanding.

Regarding attitude, most participants showed a positive perception towards cervical cancer prevention and screening, with a large proportion agreeing that cervical cancer is preventable and screening is beneficial. Similar positive attitudes among nursing students have been reported by Raychaudhuri and Mandal.<sup>[6]</sup> This favorable attitude is encouraging, as it reflects readiness among future nurses to promote preventive healthcare services.

Despite adequate knowledge and positive attitudes, screening practices were notably poor, with only a small proportion of students having undergone cervical cancer screening. This gap between knowledge and practice has also been highlighted by Nigam et al.<sup>[7]</sup> suggesting that awareness does not necessarily translate into health-seeking behavior. Among nursing students, this discrepancy may be influenced by factors such as young age, perceived low susceptibility, and lack of routine screening culture.

The most common barriers identified in this study were lack of awareness, fear of examination, and

neglect (never thought about screening). These findings are consistent with those reported by Bansal et al,<sup>[8]</sup> who emphasized psychological barriers and insufficient motivation as key obstacles. Even among healthcare trainees, fear of pelvic examination and embarrassment remain significant concerns, highlighting the need for sensitization and counseling.

HPV vaccination uptake in this study was low despite moderate awareness, which aligns with findings by Lyimo and Beran,<sup>[9]</sup> where vaccine acceptance was limited due to lack of detailed knowledge and accessibility issues. Considering that nursing students are future advocates for vaccination programs, this gap is particularly concerning.<sup>[10]</sup>

Overall, the findings suggest that while nursing students possess adequate baseline awareness and positive attitudes, there is a critical need to strengthen practical application and preventive behaviors. Incorporating structured educational modules, hands-on training in screening techniques, and institutional vaccination programs could significantly improve both practice and advocacy.

## CONCLUSION

The present study demonstrates that nursing students possess high awareness and a generally positive attitude towards cervical cancer and its prevention. However, significant gaps exist in detailed knowledge, screening practices, and HPV vaccination uptake. Despite being future healthcare providers, only a small proportion had undergone screening or received the HPV vaccine, highlighting a clear knowledge–practice gap.

The findings emphasize that awareness alone is insufficient to influence preventive behavior. Psychological barriers such as fear of examination, lack of motivation, and inadequate emphasis on personal health practices contribute to low screening uptake even among nursing students.

There is an urgent need to strengthen nursing education by incorporating:

- Practical training on cervical cancer screening methods
- Structured awareness programs on HPV vaccination
- Counseling to address fear and misconceptions

- Institutional policies promoting routine screening and vaccination

Empowering nursing students with both knowledge and practice will enable them to serve as effective advocates for cervical cancer prevention, ultimately contributing to reduced disease burden in the community.

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