

Knowledge and Attitude Regarding HPV Vaccine Among Nursing Students

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Abstract—The HPV vaccine, or Human Papillomavirus vaccine, protects against infections caused by certain types of Human Papillomavirus (HPV), which can lead to various health issues, including genital warts and cancers such as cervical, anal, and oropharyngeal cancers. The present study focuses on assessing the knowledge and attitude regarding the HPV vaccine among nursing students from selected nursing colleges in Thrissur, to prepare an information booklet. The study aims to assess the level of knowledge and attitude in relation to the HPV vaccine among nursing students, check out the correlation between knowledge and attitude, pursue the association of knowledge and attitude with selected demographic variables, and prepare and distribute an information booklet about the HPV vaccine. A descriptive survey design was adopted, and the study was conducted among 100 nursing students selected through a simple random sampling technique by lottery method. Data were collected using a structured knowledge questionnaire and a four-point modified likert attitude scale. Following data collection, an information booklet on the HPV vaccine was distributed. The findings revealed that 9% of students had adequate knowledge, 85% had moderate knowledge, and 6% had inadequate knowledge. In terms of attitude, 21% of students had an excellent attitude, 63% had a very good attitude, 16% had a good attitude, and none had a poor attitude towards the HPV vaccine. The analysis showed a significant association and correlation between the level of knowledge and attitude with variables such as age, type of family, and area of residence.

Index Terms—Knowledge; attitude; Human Papillomavirus; nursing students.

I. INTRODUCTION

Human Papillomavirus (HPV), a DNA virus that infects the epithelial cells of the skin and mucous membranes, is the most common sexually transmitted infection (STI) globally and a major contributor to cervical cancer, particularly through high-risk strains such as HPV 16 and 18. The advent of prophylactic HPV vaccines, bivalent, quadrivalent, and nonavalent, has significantly advanced cervical cancer prevention, and global guidelines, including those from the World Health Organisation (WHO), recommend routine vaccination of girls aged 9 to 14 years as part of comprehensive prevention efforts. India's recent integration of the HPV vaccine into the Universal Immunisation Programme (UIP) represents a major step toward reducing the long-term incidence of cervical cancer. However, despite the proven safety and efficacy of these vaccines, uptake remains low in many regions due to inadequate knowledge, misconceptions, social stigma, cultural taboos, and limited access, challenges that persist even among healthcare workers. As frontline providers in immunization and health education, nurses and by extension, nursing students play a crucial role in shaping public understanding and acceptance of vaccines. Yet studies consistently reveal that while healthcare students may be aware of HPV and its link to cervical cancer, they often lack comprehensive knowledge about vaccine indications, schedules, and side effects, and may exhibit varying levels of hesitancy due to insufficient curricular exposure. These gaps underline the need to assess and strengthen nursing students' knowledge and attitudes

regarding HPV vaccination to better support future prevention initiatives.

II. NEED FOR THE STUDY

Cervical cancer, caused primarily by persistent infection with high-risk Human Papillomavirus (HPV) types, is both preventable and treatable when detected early. Yet, it remains one of the most common and deadliest cancers affecting women in low- and middle-income countries. The present study seeks to assess the knowledge and attitude regarding the HPV vaccine among nursing students in selected nursing colleges in Thrissur district, Kerala. The findings from this study will provide insights into existing gaps and contribute to policy and curriculum improvements aimed at increasing HPV vaccine awareness and acceptance.

III. STATEMENT OF THE PROBLEM

A study to assess the knowledge and attitude regarding the Human Papilloma Virus (HPV) vaccine among nursing students in a selected nursing college, Thrissur.

IV. OBJECTIVES

1. To assess the level of knowledge and attitude regarding the Human Papillomavirus (HPV) vaccine among nursing students.
2. To find the correlation between the level of knowledge and attitude regarding the Human Papillomavirus (HPV) vaccine among nursing students.
3. To find the association between the level of knowledge and attitude regarding the Human Papillomavirus (HPV) vaccine among nursing students with their selected demographic variables.
4. To prepare and distribute an information booklet regarding the Human Papillomavirus (HPV) vaccine.

ASSUMPTIONS

1. Nursing students have some level of knowledge and attitude about the Human Papillomavirus (HPV) and its vaccine.
2. Knowledge and attitude regarding the HPV vaccine can vary among students based on socio-demographic factors.

HYPOTHESIS

H₁: There is a significant correlation between the level of knowledge and attitude regarding the Human Papillomavirus (HPV) vaccine among nursing students.

H₂: There is a significant association between the level of knowledge and the attitude with selected demographic variables among nursing students.

V. METHODOLOGY

The present study adopted a quantitative research approach with a descriptive research design to assess the selected variables. The study was conducted at Aswini College of Nursing, Nadathara, Thrissur. The study population comprised students of the B.Sc. Nursing program of Aswini College of Nursing in Thrissur district. A total of 100 B.Sc. Nursing students from the second and fourth semesters constituted the sample of the study. The samples were selected using a simple random sampling technique, implemented through a lottery method, to ensure equal representation of participants. The inclusion criteria for the study comprised students who were willing to participate, who could read, speak, and understand English and Malayalam, and who were not sexually active. The exclusion criteria included students who were not present at the time of data collection.

A structured questionnaire was prepared to assess the demographic variables of the participants, which included age, gender, religion, area of residence, family income, and type of family. The knowledge assessment questionnaire consisted of multiple-choice questions with four options for each item, of which only one option was the correct answer. Each correct response was awarded a score of one, while incorrect or unanswered responses were scored as zero, with a maximum possible score of 16. An

attitude assessment scale was also developed using a five-point Likert scale with the response options of strongly disagree, disagree, uncertain, agree, and strongly agree. The scores assigned ranged from 1 to 5, respectively, yielding a maximum total attitude score of 50.

Knowledge score

Category	Score	Percentage
Adequate knowledge	12-16	75%-100%
Moderate knowledge	6-11	38%-74%
Inadequate knowledge	0-5	0%-37%

Attitude Score

Category	Score	Percentage
Excellent attitude	41-50	82%-100%
Very good attitude	31-40	62%-81%
Good attitude	21-30	42%-61%
Poor attitude	10-20	20%-41%

DATA COLLECTION PROCEDURE

The data collection process involved gathering information using structured tools and was completed within a period of one week after obtaining ethical clearance and formal permission from the Principal of Aswini College of Nursing. Permission was also obtained from the class coordinators of the second and fourth semester B.Sc. Nursing students. A total sample size of 100 students was selected using a simple random sampling technique through the lottery method, with 50 students from each semester chosen from a total of 80 second-semester and 79

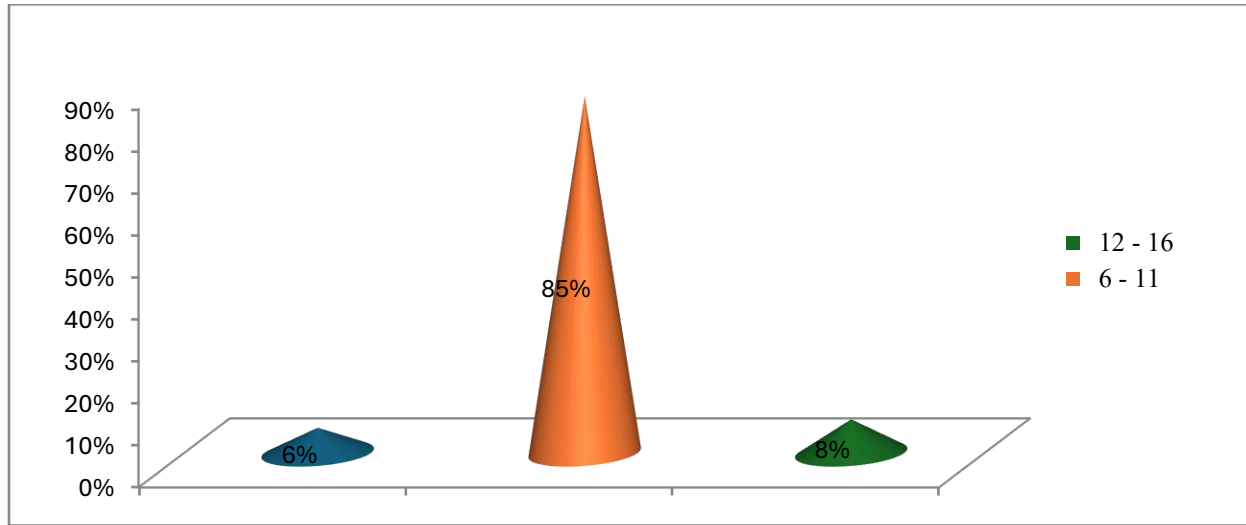
fourth-semester students, excluding married students. After explaining the purpose and objectives of the study, informed consent was obtained from each participant, and data were collected using a demographic profile, a knowledge assessment questionnaire, and an attitude assessment scale. Confidentiality was assured, and approximately 30 minutes were spent in each classroom. Data collection was completed on 09/05/2025. Following data collection, an informational booklet on HPV vaccination was distributed to the participants, and their doubts regarding HPV vaccination were clarified.

VI. RESULTS

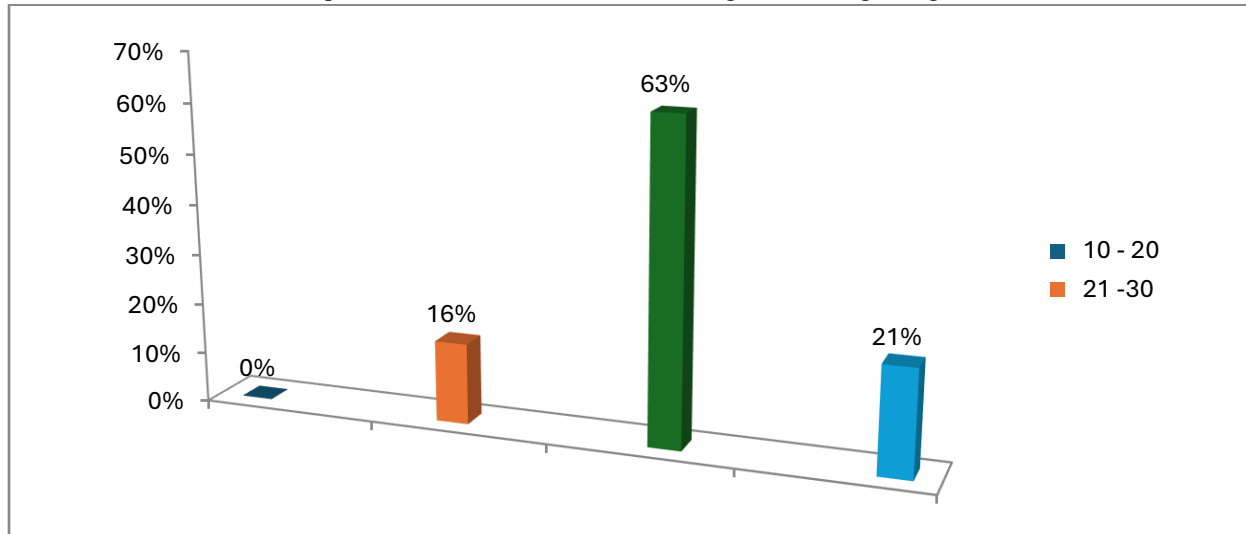
Section A: Description of demographic profile of nursing students.

The demographic profile of the nursing students revealed that out of the 100 samples, the majority, 40 (40%), belonged to the age group of 19 years, followed by 32 (32%) who were 20 years old, 19 (19%) who were 18 years old, and 9 (9%) who were 21 years old. With regard to gender, most of the participants were females 83 (83%), while 17 (17%) were males. In terms of religion, 43 (43%) were Hindus, 42 (42%) were Christians, and 15 (15%) were Muslims. Regarding the area of residence, more than half of the students 51 (51%) belonged to semi-urban areas, followed by 27 (27%) from urban areas and 22 (22%) from rural areas. Concerning family income, 33 (33%) of the students' families had a monthly income below Rs. 30,000/-, 29 (29%) were below Rs. 10,000/-, 23 (23%) fell within the range of Rs. 10,001–20,000/-, and 15 (15%) were between Rs. 20,001–30,000/-. With respect to family type, the majority 86 (86%) belonged to nuclear families, 11 (11%) to joint families, and only 3 (3%) to extended families. Among the participants, 80 (80%) had not taken the HPV vaccine, whereas 20 (20%) had received the HPV vaccine. Regarding previous knowledge about the HPV vaccine, a majority of 57 (57%) of the students had prior knowledge, while the remaining 43 (43%) did not have adequate knowledge regarding the HPV vaccine.

Section B: Description of the level of knowledge of nursing students regarding the HPV vaccine.



Section C: Description of the level of attitude of nursing students regarding the HPV vaccine



Section D: Description of the correlation between the level of knowledge and the attitude of nursing students regarding the HPV vaccine

N=100

SI No	Variables	N	r value
1	Knowledge	100	0.150**
2	Attitude	100	

**Non-significant at 0.05 level

The above table shows that there is a very weak correlation between the level of knowledge and the attitude of nursing students regarding the HPV vaccine, as the r value is 0.150, which is non-significant at the 0.05 level.

Hence, the null hypothesis H_{01} that there is weak significant correlation between the level of knowledge and the attitude regarding the HPV vaccine among nursing students is accepted and the research hypothesis H_1 is rejected.

Section E: Description of the association between level of knowledge between level of knowledge of nursing students regarding the HPV vaccine with their selected demographic variables

The chi-square value obtained is less than the table value for all demographic variables except for previous knowledge. Hence, the null hypothesis H_{02} that there is no significant association between the knowledge and attitude with selected demographic

variables among nursing students is accepted and the research hypothesis H_2 is rejected.

Section F: Description of the association between the attitude of nursing students regarding the HPV vaccine with their selected demographic variables

The chi-square value obtained is less than the table value for all demographic variables. Hence, the null hypothesis H_{02} that there is no significant association between the knowledge and attitude with selected demographic variables among nursing students is accepted and the research hypothesis H_2 is rejected.

VII. DISCUSSION

In relation to the first objective, which was to assess the level of knowledge and attitude regarding the Human Papillomavirus (HPV) vaccine among nursing students, the study found that 8% had adequate knowledge, 85% had moderate knowledge, and 7% had inadequate knowledge, while attitudes were largely positive, with 21% exhibiting an excellent attitude, 63% a very good attitude, and 16% a good attitude. Supporting evidence from a study at Benha University similarly reported moderate knowledge (53.6%) and positive attitudes (67.5%) among nursing students.

For the second objective, to determine the correlation between knowledge and attitude, the present study showed a weak correlation at the 0.05 significance level, consistent with a Turkish study involving 1,011 adults that reported low knowledge, moderate attitudes, and weak correlations between knowledge, attitude, and hesitancy.

Regarding the third objective, to identify the association between knowledge and attitude with selected demographic variables, chi-square analysis revealed no significant association with age, sex, religion, residence, income, family type, HPV vaccination history, or prior knowledge, a finding supported by a study among 37 nurses at HUSM, which also reported low knowledge, positive attitudes, and no significant demographic associations.

VIII. CONCLUSION

Several vaccines have been approved for use against Human Papillomavirus and distributed globally in different regions. The nursing student's knowledge

and attitude towards the HPV vaccine are very effective from the study. It has been proven that there is significant knowledge about the vaccine. Presently, the study concluded that there is a favourable attitude regarding the HPV vaccine. The study also suggests that there is a need to create awareness among nursing students. The knowledge about the HPV vaccine is moderate, according to the majority of respondents.

IX. NURSING IMPLICATIONS

Nursing implications of the study can be made in the following fields in relation to nursing students, such as nursing education, nursing practice, nursing administration and nursing research.

Nursing practice

- Nurses play a vital role in the primary prevention of cervical cancer through HPV vaccination advocacy.
- Well-informed nursing students can educate their peers, patients, and the community about HPV, the benefits of the vaccine, and its safety.
- Positive attitudes and adequate knowledge ensure future nurses are competent and confident in counselling and administering the HPV vaccine.
- Nurses and nursing students can be mobilized for community health programs and school-based HPV vaccine drives, improving local vaccination rates.

Nursing education

- HPV vaccine education should be introduced in the early stages of the nursing curriculum, ensuring foundational knowledge in preventive oncology.
- Teaching strategies should emphasize evidence-based practices related to HPV prevention, enabling students to apply knowledge in clinical and community settings.
- The findings reinforce the importance of continuing education in emerging public health topics like HPV and other vaccine-preventable diseases.
- Teaching about HPV requires a gender-sensitive and culturally competent approach, helping students become more empathetic and respectful practitioners.

- Knowledge about HPV vaccination enhances students' ability to lead health campaigns, especially in schools and rural areas, strengthening their role as health educators.

Nursing administration

- Administrative leaders can ensure the integration of HPV and cervical cancer prevention modules in academic planning and course design.
- Administrators should facilitate in-service training programs, guest lectures, and workshops on HPV for students, faculty and the public to maintain updated knowledge.
- Nursing administrators can collaborate with public health departments, NGOs, and government immunization programs to strengthen HPV vaccine promotion.
- Administrators can encourage nursing students to organize HPV awareness drives, vaccination camps, and school health programs, enhancing institutional outreach.

Nursing research

- The study highlights existing gaps in knowledge and attitudes about HPV vaccination, which can guide future research topics and educational interventions.
- The study can serve as a baseline for longitudinal or comparative studies to evaluate the impact of training programs on HPV vaccine awareness over time.
- Provides a basis for collaborative research involving nurses, public health officials, educators, and policymakers to develop holistic interventions.
- Encourages research on related themes such as HPV vaccine hesitancy, sociocultural barriers, gender perceptions, and vaccine policy implementation in nursing or allied health fields or the general public.

- Conduct similar studies in different regions to compare knowledge and attitudes across geographical locations.
- Implement longitudinal studies to evaluate changes in knowledge and attitudes over time.
- Undertake qualitative research (e.g., focus groups, interviews) to explore personal beliefs and barriers regarding HPV vaccination.
- Conduct gender-based comparative studies to understand differences in knowledge and attitudes among male and female students.

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X. RECOMMENDATIONS

Based on the findings of the present study, the recommendations offered for future research are:

- A similar study can be replicated among community health workers.
- A similar study can be replicated in larger samples for wider generalisation.