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Original Research

CURRENT SITUATION AND BARRIERS TO HPV VACCINATION AMONG FEMALE NURSING STUDENTS AT TRA VINH UNIVERSITY, VIETNAM, 2024

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ABSTRACT: Cervical cancer is one of the most common cancers in women and can be prevented through HPV vaccination. However, HPV vaccination coverage in Vietnam remains low, especially among healthcare students. This study aimed to assess the status and barriers to HPV vaccination among female nursing students at Tra Vinh University. A descriptive cross-sectional study was conducted among 233 female nursing students from May to July 2024. Data were collected using a self-administered questionnaire and analyzed with SPSS 22.0, employing descriptive statistics, Chi-square tests, and logistic regression. Only 15.5% of students had received at least one dose of HPV vaccine, with 9.4% completing the full three-dose schedule. The main barriers included high cost (73.4%), concerns about side effects (28.8%), perception of unnecessary vaccination without prior sexual activity (22.3%), and lack of accurate information (21.5%). Most students had good knowledge and positive attitudes: 91.4% knew HPV vaccine prevents cervical cancer, 91.8% trusted its effectiveness, and 92.3% were willing to recommend it to peers. HPV vaccination coverage among female nursing students remains low, largely due to financial constraints and insufficient information. Strengthened health education and financial support policies are essential to improve vaccination uptake in this population.

Keywords: HPV vaccine; Cervical cancer; Nursing students; Vaccination barriers; Expanded Program on Immunization.

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1. INTRODUCTION

Cervical cancer (CC) is one of the most common malignant diseases in women and a leading cause of cancer-related mortality in developing countries. According to the World Health Organization (WHO), there are over 500,000 new cases and approximately 300,000 deaths annually, with more than 80% occurring in low- and middle-income countries. In Vietnam, cervical cancer ranks among the top 10 most common cancers in women, imposing a growing burden of disease and healthcare costs.

The primary cause of cervical cancer is persistent infection with human papillomavirus (HPV), particularly high-risk types such as HPV 16 and 18. Evidence has shown that HPV vaccination is an effective preventive measure, reducing the risk of cervical cancer by 70–90% when administered before sexual debut. Consequently, many countries have included HPV vaccination in their national immunization programs to lower cervical cancer incidence and mortality.

In Vietnam, HPV vaccines have been licensed but are only available through private services at relatively high costs, limiting access—especially among young adults and students. Although healthcare students are expected to play a key role in health education and counseling, studies in Vietnam have reported low HPV vaccination rates in this group.

Nursing students represent a crucial future workforce in primary healthcare and community health promotion. Understanding their knowledge, attitudes, practices, and barriers regarding HPV vaccination provides important evidence for designing interventions to increase vaccination rates and prevent cervical cancer.

This study was conducted to: describe the status of HPV vaccination and analyze barriers to HPV vaccination among female nursing students at Tra Vinh University in 2024.

2. MATERIALS AND METHODS

2.1. Study population

A total of 233 female undergraduate nursing students (1st to 4th year) at Tra Vinh University participated in the study (May–July 2024).

2.2. Study design

A descriptive cross-sectional study.

2.3. Sample size and sampling

All 233 eligible students were recruited using convenience sampling.

2.4. Data collection tools and procedure

A self-administered questionnaire was used, including sections on sociodemographic characteristics, knowledge, attitudes, and barriers related to HPV vaccination.

2.5. Data analysis

Data were analyzed using SPSS 22.0. Descriptive statistics were applied. Associations between variables were tested with Chi-square and logistic regression.

2.6. Ethical considerations

The study protocol was approved by the Ethics Committee of Tra Vinh University. Participation was voluntary and confidentiality of information was assured.

3. RESULTS

Table 1. Sociodemographic characteristics of participants

Characteristics	Freq. (n)	Per. (%)
Mean age (20.5 ± 1.2)	233	100
Age group 18–20	124	53.2
First-year students	86	36.9
Unmarried	232	99.6
Had clinical practice experience	145	62.2

Table 2. HPV vaccination status among female nursing students

Vaccination status	Freq. (n)	Per. (%)
Not vaccinated	197	84.5
Received 1 dose	9	3.9
Received 2 doses	5	2.1
Completed 3 doses	22	9.4

Table 3. Barriers to HPV vaccination

Barriers	Freq. (n)	Per. (%)
High cost	171	73.4
Concerns about side effects	67	28.8
Perception of unnecessary vaccine	52	22.3
Doubts about vaccine effectiveness	50	21.5
Fear of injection	37	15.9
Multiple-dose schedule	24	10.3
Family disapproval	3	1.3

Knowledge and attitudes

91.4% knew HPV vaccine prevents cervical cancer.

66.1% knew the vaccine provides long-term immunity.

65.7% knew women with sexual experience can still be vaccinated.

Overall, 75.1% demonstrated good knowledge.

Regarding attitudes: 91.8% trusted vaccine effectiveness, and 92.3% were willing to recommend HPV vaccination to peers.

4. DISCUSSION

The study results revealed that the HPV vaccination rate among female nursing students at Tra Vinh University was low, with only 9.4% completing the full three-dose schedule. This finding is consistent with other studies conducted in Vietnam, indicating that HPV vaccination among healthcare students remains limited.

The main barriers identified were high cost, concerns about adverse effects, and misconceptions about the necessity of vaccination prior to sexual activity. These barriers have also been reported in many international studies, confirming that they are common challenges that need to be addressed. In addition, the study demonstrated a statistically significant association between knowledge, positive attitudes, and vaccination behavior, suggesting that raising awareness could improve vaccine uptake. The findings highlight the importance of health education programs to provide accurate information, as well as financial support policies to reduce the cost burden. Training and strengthening knowledge for healthcare students is particularly important, as they will be the key workforce in cervical cancer prevention and community health promotion.

The study results confirmed that HPV vaccination coverage among nursing students at Tra Vinh University remains low, similar to findings from other studies in Ho Chi Minh City and Hanoi. The main barriers, including high cost and lack of information, were also consistent with international evidence. This indicates the need for financial support policies and more effective health communication programs. Furthermore, strengthening the training of healthcare students in cervical cancer prevention is essential, as they will play a central role in patient care and community health education.

In addition to the previously identified barriers, HPV vaccination among nursing students is also influenced by policy, social, and cultural determinants.

First, the cost of the vaccine remains a significant barrier. Most students must pay out of pocket, as the national health insurance scheme does not yet cover HPV vaccination. This financial burden causes many students, despite having adequate knowledge, to delay or avoid vaccination. In contrast, in countries such as Australia, the United Kingdom, and Japan, HPV vaccination has been incorporated into the national immunization program and is partially or fully subsidized by public health insurance, resulting in coverage rates of over 70–90%. These successful models highlight the importance of financial and policy support in increasing vaccine uptake in Vietnam.

Second, socio-cultural factors also play an important role. A considerable number of students and their families remain hesitant to discuss reproductive health, or believe that vaccination is unnecessary before sexual debut. Such misconceptions contribute to delays and missed opportunities for early prevention. Compared to Western countries, where reproductive health issues are communicated more openly,

Vietnamese cultural norms still carry stigma and sensitivity, which may reduce the effectiveness of vaccination programs.

Third, the role of education and health communication for nursing students is particularly critical. Nursing students are not only vaccine recipients but also represent the future workforce in health education and patient counseling. When adequately trained, equipped with positive attitudes, and given firsthand vaccination experiences, nursing students can act as "health ambassadors," helping to reshape community perceptions, reduce stigma around reproductive health, and promote HPV vaccination uptake in the broader population.

In summary, improving HPV vaccination rates among students requires an integrated approach that combines health policy support (financial subsidies and insurance coverage), social communication (addressing cultural barriers), and medical education (empowering nursing students as key advocates for vaccination).

5. CONCLUSION

The findings of this study indicate that the HPV vaccination rate among female nursing students at Tra Vinh University remains low. The main barriers identified include concerns about the number of doses required, high cost, potential side effects, and the overall effectiveness of the HPV vaccine, as well as the perception that vaccination is unnecessary prior to sexual initiation. The study underscores the appropriateness and necessity of integrating HPV vaccination into the National Immunization Program to enhance accessibility and reduce the financial burden. Furthermore, nursing students should receive strengthened education and training on the importance of HPV vaccination, as they are both a target group and the future healthcare workforce.

REFERENCES

[1] Borlu A, Balci E, Sagiroglu M, Gunay O. Knowledge and attitudes of medical and non-medical Turkish university students about cervical cancer and HPV vaccination. Asian Pac J Cancer Prev. 2016;17(1):288-93. doi:10.7314/APJCP.2016.17.1.288

[2] Olaitan A. Updates on HPV vaccination. J Obstet Gynaecol. 2023;13(2):243. doi:10.1080/01443615.2023.2166900

[3] Shetty AK, Prabhu S, Shetty S, Shetty V. Knowledge, attitudes and factors associated with acceptability of human papillomavirus vaccination among undergraduate medical, dental and nursing students in South India. Hum Vaccin Immunother. 2019;15(7-8):1656-65. doi:10.1080/21645515.2019.1579714

[4] Gu A, Zhou L, Xu X, Li Y, et al. On imported and domestic human papillomavirus vaccines: cognition, attitude, and willingness to pay in Chinese medical students. Front Public Health. 2022;10:863748. doi:10.3389/fpubh.2022.863748

[5] Centers for Disease Control and Prevention. Adult immunization schedule by age. CDC; 2024. Available from: https://www.cdc.gov/vaccines/schedules/hcp/imz/adult.html

[6] Centers for Disease Control and Prevention. Cervical cancer. CDC; 2023. Available from: https://www.cdc.gov/cancer/cervical/index.htm

[7] Centers for Disease Control and Prevention. Human papillomavirus (HPV) infection. CDC; 2021. Available from: https://www.cdc.gov/std/hpv/stdfact-hpv.htm

[8] Law CK, Leung JTC. Revisiting knowledge, attitudes and practice (KAP) on human papillomavirus (HPV) vaccination among female university students in Hong Kong. Hum Vaccin Immunother. 2018;14(4):924-30. doi:10.1080/21645515.2017.1412890

[9] Pelullo CP, Di Giuseppe G, Esposito MR. Human papillomavirus infection and vaccination: knowledge and attitudes among nursing students in Italy. Int J Environ Res Public Health. 2019;16(10):1770. doi:10.3390/ijerph16101770

[10] Global Cancer Observatory. Global cancer statistics. Lyon, France: IARC; 2018. Available from: https://gco.iarc.fr

[11] Global Cancer Observatory. Global cancer statistics. Lyon, France: IARC; 2020. Available from: https://gco.iarc.fr

[12] Global Cancer Observatory. Summary statistics. Lyon, France: IARC; 2020. Available from: https://gco.iarc.fr

[13] Global Cancer Observatory. Globocan estimates of incidence and mortality worldwide for 36 cancers in 185 countries. Lyon, France: IARC; 2018. Available from: https://gco.iarc.fr

[14] Hall MT, Lew JB, Smith MA, Simms KT, et al. The projected timeframe until cervical cancer elimination in Australia: a modelling study. Lancet Public Health. 2019;4(1):e19-27. doi:10.1016/S2468-2667(18)30183-X

[15] Wang J, Zhou L, Cheng P, et al. HPV

vaccine hesitancy among medical students in China: a multicenter survey. Front Public Health. 2022;10:774767. doi:10.3389/fpubh.2022.774767

[16] Wu J, Zheng L, Zheng M. Barriers to and facilitators of human papillomavirus vaccination among people aged 9 to 26 years: a systematic review. Sex Transm Dis. 2021;48(12):255-62. doi:10.1097/OLQ.0000000000001493

[17] Liu Y, et al. Knowledge, practice and attitude towards HPV vaccination among college students in Beijing, China. Hum Vaccin Immunother. 2020;16(1):116-23. doi:10.1080/21645515.2019.1627831

[18] National Institutes of Health. Human papillomavirus (HPV). NIH; 2021. Available from: https://www.nih.gov

[19] Pimple S, Mishra G. Cancer cervix: epidemiology and disease burden. Cytojournal. 2022;19:29. doi:10.25259/Cytojournal_45_2022

[20] Wilailak S, Kehoe S, Kengsakul M. Worldwide initiatives to eliminate cervical cancer. Int J Gynaecol Obstet. 2021;155(S1):102-6. doi:10.1002/ijgo.13825

[21] Singh D, et al. Global estimates of incidence and mortality of cervical cancer in 2020: a baseline analysis of the WHO Global Cervical Cancer Elimination Initiative. Lancet Glob Health. 2023;11(2):e197-206. doi:10.1016/S2214-109X(22)00449-X

[22] World Health Organization. Cervical cancer. WHO; 2023. Available from: https://www.who.int/health-topics/cervical-cancer

[23] World Health Organization. Global Advisory Committee on Vaccine Safety, 7–8 June 2017. WHO; 2017. Available from: https://www.who.int/publications/m/item/global-advisory-committee-on-vaccine-safety-june-2017

[24] World Health Organization. Guidelines for screening and treatment of precancerous lesions for cervical cancer prevention. WHO; 2013. Available from: https://www.who.int/publications/i/item/9789241548694

[25] World Health Organization. Human papillomavirus (HPV) vaccines. WHO; 2021. Available from: https://www.who.int/news-room/fact-sheets/detail/human-papillomavirus-(hpv)-vaccines

[26] World Health Organization. Safety of HPV vaccines. WHO; 2017. Available from: https://www.who.int/publications/i/item/WHO-IVB-17.05

[27] World Health Organization. Vaccines and immunization: what is vaccination?. WHO; 2021. Available from: https://www.who.int/news-room/questions-and-answers/item/vaccines-and-immunization-what-is-vaccination.