

Research article

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# Survey of knowledge about HPV, cervical cancer, and awareness of the importance of cervical cancer screening and prevention among nursing and medical technology students at Pham Ngoc Thach University of Medicine in 2023

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## Abstract

**Background:** Cervical cancer is a prevalent type of cancer in women (ranking 4<sup>th</sup> in the world, 7<sup>th</sup> in Vietnam), primarily caused by high-risk HPV types. Nursing-Medical Technology students are future healthcare professionals who are essential in raising public awareness about HPV vaccination and cervical cancer screening testing.

**Objectives:** To assess knowledge about HPV and cervical cancer and awareness of the importance of cervical cancer screening and prevention among Nursing and Medical Technology students at Pham Ngoc Thach University of Medicine in 2023.

**Methods:** An online cross-sectional descriptive survey was conducted from the first-year to the fourth-year students of the Nursing and Medical Technology Department at Pham Ngoc Thach University of Medicine.

**Results:** 421 students took part in the study. The mean score of students about HPV, cervical cancer, and cervical cancer screening and prevention was  $23.76 \pm 8.87$  out of 50. 94.8% of students are aware of the necessity of cervical cancer screening. 51.8% of the students provided incorrect answers about the possibility of HPV infection in men. Among 400 students who already known about the HPV vaccine, 115 students (28.7%) have taken the vaccine, and 285 students citing the high cost of the vaccine as a deterrent.

**Conclusions:** Nursing-Medical Technology students had a good awareness of the importance of cervical cancer screening and prevention, but their knowledge about HPV, cervical cancer, and their rates of vaccination were low. It is necessary to have effective awareness programs for students about HPV, cervical cancer, and HPV vaccination from their first year of study in university.

**Keywords:** Nursing and Medical Technology students, Pham Ngoc Thach University of Medicine, knowledge, awareness, HPV, cervical cancer.

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## 1. INTRODUCTION

According to 2020 statistics, there were 604,127 new cases of cervical cancer, which is the fourth most diagnosed cancer in women, and 341,831 deaths around the world. In Vietnam, cervical cancer is the seventh most common cancer, with 4,132 new cases and 2,223 deaths [1]. The majority of cervical cancer cases

(more than 95%) are due to high-risk Human Papillomavirus (HPV) infection, with the most prevalent strain being HPV 16 and HPV 18 [2]. HPV infection can still occur in men. A study carried out by Chesson and colleagues shows that the probability of acquiring HPV at least once in a lifetime in men (91.3%) is higher than in women (84.6%) [3].

These days, in Vietnam, there are a lot of cervical cancer screening and HPV vaccination programs to allow its citizens to prevent cervical cancer actively [4]. To achieve good results in these programs, medical staffs need to have solid knowledge, good attitudes, and practice to effectively carry out propaganda and education to raise public awareness of HPV, cervical cancer, and HPV vaccination.

Nursing and Medical Technology students at Pham Ngoc Thach (PNT) University of Medicine are an essential source of the healthcare workforce in the future, which plays a role in performing cervical cancer screening tests, HPV vaccination or propagation, guides the patients and the community on issues related to screening and prevention of HPV infection and cervical cancer. In addition, they are also in the age group for HPV vaccination. Therefore, the research team surveyed to evaluate the level of knowledge about HPV, cervical cancer, and awareness of the importance of screening and preventing cervical cancer in this population. From the result, the research team can evaluate the current state of students' knowledge and provide data as a basis for providing feasible solutions to raise awareness among students at PNT University of Medicine about HPV and cervical cancer.

## 2. METHODS

**Study participants** are the first-year to the fourth-year Nursing and Medical Technology students at PNT University of Medicine.

- **Inclusion criteria:** All the Nursing-Medical technology students at PNT University of Medicine voluntarily agreed to participate in the study.

- **Exclusion criteria:** The students who left the questionnaires incomplete or who were absent when the research team surveyed their class.

**Study period:** From April, 2023 to June, 2023

**Study location:** PNT University of Medicine

**Study design:** Cross-sectional descriptive study.

**Sample size:** The Research Team calculated the minimum required sample size using a formula for estimated prevalence in a descriptive study. The research team chose  $p = 0.545$  according to a previous study by Le Thi Bich

Ngoc and colleagues (2019) [5], and the calculated result is  $n = 381$  participants. The research team received 421 responses, which meet the minimum requirements for the study.

**Sampling method:** Convenience sampling. The Research Team contacted all classes belonging to the Nursing-Medical Technology Department (through email or direct meetings at their classes) to survey. The students were strictly supervised during the direct survey meetings to avoid exchanging information or searching for references.

**Study instruments:** This study used an online questionnaire (Google Forms) to collect data, which included three parts:

- **Part 1 (9 items):** Collection of personal information of the participants.

- **Part 2 (8 items):** Survey of participants' knowledge about HPV and cervical cancer. The highest score possible is 31 points.

- **Part 3 (9 items):** Survey of participants' awareness of the importance of cervical cancer screening and prevention. The highest score possible is 19 points.

The study questionnaire was developed by authors after an extensive review of (1) Le Thi Bich Ngoc and Nguyen Thi Tu Ngoc study in 2019 [5] and (2) Nguyen Thi Xuan Lieu and Duong Hue Phuong study in 2020 [6]. Besides the questions from the previous studies, the research team also created some related items and received feedback from other experts on this research topic before the survey.

**Statistical analysis:** An auto-generated worksheet (Excel) collected data from all the responses on Google Forms. The Research Team then analyzed the data using SPSS software version 16.0. Frequencies ( $n$ ) and percentages (%) expressed statistics for each item. Mean ( $\bar{X}$ ) and standard deviation (SD) expressed the mean score, which was then compared with other studies.

**Ethical considerations:** Ethical Review Committee of PNT University of Medicine approved this study on 20/04/2023. Participants were informed about the purpose and meaning of the research and voluntarily participated in this research. The data collected from research participants is for research purposes only.

### 3. RESULTS

#### 3.1. Characteristics of the participants

Among 421 participants, 76% are female, and 46,5% are Nursing students; the remaining are Medical Technology students, with the majority being Laboratory Medical students (31.1%). As for Level of Education, the first-year students account for 40.9% of the total participants. Most of the students have heard about cervical cancer (99.5%) and know HPV vaccination (95%). The Internet is the most popular source of knowledge for them (80.3%) (Table 1).

**Table 1.** Characteristics of the participants (N=421)

Question		Frequency (n)	Percentage (%)
Gender	Female	320	76
	Male	101	24
Level of Education	First year	172	40.9
	Second year	63	14.9
	Third year	91	21.6
	Fourth year	95	22.6
Major/ Specialization	Laboratory Medical	131	31.1
	Medical Imaging Technology	58	13.8
	Optometry	36	8.6
	Nursing	196	46.5
Have heard about Cervical Cancer	Yes	419	99.5
	No	2	0.5
Have heard about HPV Vaccination	Yes	400	95
	No	21	5
Source of Information for the participants	Internet	338	80.3
	Lectures from School	282	67
	Books, Newspapers, TV	261	62
	Friends and Relatives	257	61
	Healthcare Workers	246	58.4

Among 400 students who have known about HPV vaccination, only 115 students (28,7%) got vaccinated. As for those who have not taken the vaccine (285 students), 53% of these students will very likely take the vaccine in the future, 32% will likely take the vaccine, 9% are neutral, 2% of the participants will unlikely, and 4% of the participants will very unlikely take part in this practice.

Table 2 shows the reasons that encourage the participants to take the HPV vaccine and the obstacles that prevent them from taking the vaccine. Of many listed reasons, high-priced (68,4%) is the main reason that makes students hesitate to take the vaccine. Meanwhile, the main reason students take the vaccine is that it helps Reduce the Risk of Cervical Cancer (96.5%). Apart from the reasons listed by the research team, some students also share their reasons, including not having time, male Students who think they do not need vaccination, and the lack of vaccine supply at the vaccination site.

**Table 2.** Reasons make students decide to or not to take the HPV vaccine

Reason	Frequency (n)	Percentage (%)	Reason	Frequency (n)	Percentage (%)
<b>Prevent students from taking HPV vaccine</b>			<b>Encourage students to take HPV vaccine</b>		
High-priced	195	68,4	Reduce risk of cervical cancer	111	96,5
Have to take many doses	56	19,6	Advice from doctors	39	33,9
Fear of needles	37	13	Forced by parents	28	24,3
Worry about safety	34	11,9	Advice from friends	24	20,9
Waste time	34	11,9	Saw others take the vaccine	13	11,3
Not attend to any sexual activities	33	11,6	Free vaccination program	3	2,6
Worry about efficiency	31	10,9	Prepare for marriage	2	1,7

**3.2. Participants’ Knowledge about HPV and Cervical Cancer**

Table 3 shows participants’ knowledge of cervical cancer, while Table 4 gives information on students’ knowledge of HPV. The percentage of correct answers to questions about risk factors, symptoms of cervical cancer, and routes of HPV transmission is relatively high. In some questions that allowed multiple answers, the research team also included distractors, which are false answers, and they are labeled (F) in Table 4. A small percentage of students chose these false answers. In a multiple answers question about the HPV transmission route, 24.9% of students chose through the patient’s blood, and there are 46.6% of students chose ovarian cancer

**Table 3.** Participants’ knowledge about Cervical Cancer

Question		Correct Answer N (%)	Wrong Answer N (%)	Do not Know N (%)
Risk factors of Cervical Cancer	Infected with high - risk HPV	312 (74.1)	77 (18.3)	32 (7.6)
	Multiple sexual partner	309 (73.4)	80 (19)	
	Early sexual activity (before 18 year old)	284 (67.5)	105 (24.9)	
	Poor hygiene	269 (63.9)	120 (28.5)	
	Family history of having cervical cancer	203 (48.2)	186 (44.2)	
	Acquired Immunodeficiency Syndrome	200 (47.5)	189 (44.9)	
	Smoking	75 (17.8)	314 (74.6)	
	Obesity	39 (9.3)	350 (83.1)	

Question		Correct Answer N (%)	Wrong Answer N (%)	Do not Know N (%)
Symptoms of Cervical Cancer	Abnormal vaginal discharge	216 (51.3)	84 (20)	121 (28.7)
	Vaginal pain and bleeding postcoital	189 (44.9)	111 (26.4)	
	Frequent lower abdominal pain	186 (44.2)	114 (27.1)	
	Pelvic pain	172 (40.9)	128 (30.4)	
	Postmenopausal Bleeding	153 (36.3)	147 (35)	
	Obstructive uropathy, painful urination	139 (33)	161 (38.3)	
	Menorrhagia	137 (32.5)	163 (38.8)	
	Asymptomatic	108 (25.7)	192 (45.6)	
Age group at risk of Cervical Cancer		143 (34)	202 (48)	76 (18)

*as a disease associated with HPV infection.*

**Table 4.** Participants' knowledge about HPV

Question		Correct Answer N (%)	Wrong Answer N (%)	Do not Know N (%)
Routes of HPV transmission	Sexual activities	365 (86.7)	10 (2.4)	46 (10.9)
	Using the same underwear and blankets	248 (58.9)	127 (30.2)	
	Mother to child	122 (29)	253 (60.1)	
	Through open - wound	118 (28)	257 (61.1)	
	Using the same bath and toilet	76 (18.1)	299 (71)	
	Through the patient's blood (F)*	270 (64.2)	105 (24.9)	
	Patients coughing and sneezing (F)*	363 (86.2)	12 (2.9)	
	Using the same utensils (F)*	363 (86.2)	12 (2.9)	
	Hugging and holding hands with the patients (F)*	367 (87.2)	8 (1.9)	
Disease Associated with HPV Infection	Genital warts	262 (62.2)	48 (11.4)	111 (26.4)
	Vaginal cancer	181 (42)	129 (30.6)	
	Penile cancer	126 (29.9)	184 (43.7)	
	Anal cancer	87 (20.7)	223 (52.9)	
	Ovarian cancer (F)*	114 (27)	196 (46.6)	
	Breast cancer (F)*	262 (62.2)	48 (11.4)	

Question		Correct Answer N (%)	Wrong Answer N (%)	Do not Know N (%)
HPV type causes Genital Warts	<b>HPV 6</b>	<b>119 (28.3)</b>	<b>40 (9.4)</b>	<b>262 (62.3)</b>
	<b>HPV 11</b>	<b>117 (27.8)</b>	<b>42 (9.9)</b>	
	HPV 16 (F)	122 (28.9)	37 (8.8)	
	HPV 18 (F)	131 (31)	28 (6.7)	
HPV type causes Cervical Cancer	<b>HPV 16</b>	<b>139 (33)</b>	46 (11)	<b>236 (56)</b>
	<b>HPV 18</b>	<b>142 (33.7)</b>	43 (10.3)	
	HPV 6 (F)	148 (35.2)	37 (8.8)	
	HPV 11 (F)	134 (31.9)	51 (12.1)	

Note.

(F) These are distractors (False answers).

\* Participants did not get penalty points when they chose these false answers nor receive points when they ignored them.

### 3.3. Participants’ awareness of the importance of Cervical Cancer Screening and Prevention

Table 5 illustrates the participants’ awareness of the importance of screening and preventing cervical cancer, which was quite good. However, the statistics from Table 6 reveal that 51.8% of students were not aware of the possibility of HPV infection in men. The percentage of students who chose the wrong answer for the question Men are not at risk of HPV infection is 28.3%, while 23.5% of students did not know the answer. Furthermore, 53% of students knew that men also needed to take the vaccine, while 29% did not know the answer.

**Table 5.** Students’ evaluation of their awareness about cervical cancer screening and the importance of participating in the screening program

Question		Frequency	Percentage
Have heard about screening program	Yes	336	79.8%
	No	85	20.2%
Have heard about tests used in screening program	Yes	312	74.1%
	No	109	25.9%
Evaluate the importance of Cervical Cancer Screening Program	Very important	260	61.8%
	Important	139	33.0%
	Neutral	17	4.0%
	Unimportant	1	0.2%
	Very unimportant	4	1%

**Table 6.** Students’ knowledge about cervical cancer screening program and preventions

Question		Correct Answer N (%)	Wrong Answer N (%)	Do not Know N (%)
Tests used in screening program	Cervical Cytology	188 (44.7)	23 (7.3)	210 (48)
	DNA - HPV testing	142 (33.7)	69 (18.3)	
	Visual inspection with acetic acid (VIA)	52 (12.4)	159 (39.6)	
	Visual inspection with Lugol's iodine (VILI)	43 (10.2)	168 (41.8)	
Men are not at risk of HPV infection <sup>1</sup>		203 (48,2)*	119 (28,3)	99 (23,5)
Men do not need HPV vaccination <sup>1</sup>		223 (53)*	76 (18)	122 (29)
Women age to participate in cervical cancer screening		58 (13,8)	250 (59,2)	113 (27)
Recommended age for HPV vaccination		89 (21,1)	290 (68,9)	42 (10)
<i>Note.</i>				
<sup>1</sup> <i>These are True/False question.</i>				
<i>*Students are Correct if they answer “False” for these statements.</i>				

**3.3. Average score of the participants and its association to Age, Level of Education**

The Research Team divided 16 survey items into two groups: (1) students’ knowledge about HPV and cervical cancer and (2) students’ awareness of the importance of screening and preventing cervical cancer. The total score of the questionnaire is 50 points (each correct answer counts as 1 point, and incorrect answers will not deduct points). The average score of students participating in the survey is  $23.76 \pm 8.87$ , with the lowest being 1 point and the highest being 48 points. When grouped by Gender, statistics show that the mean score of female students ( $24.01 \pm 8.66$ ) is higher than male students ( $22.96 \pm 9.49$ ). However, the result of the T-test for independent samples shows no statistically significant difference between the two groups ( $p = 0.302 > 0.05$ ). Grouping by Level of Education shows that the 1st year group has the lowest mean score ( $19.85 \pm 8.52$ ), and the highest mean score belongs to the 3rd year group ( $26.85 \pm 8.13$ ). The mean score of 2nd year students is  $24.67 \pm 8.19$ , and the result is  $23.76 \pm 8.87$  for the 4th

year group. When grouping by Major, students majoring in Laboratory Medical have the highest average score ( $26.18 \pm 6.93$ ), students majoring in Nursing have a mean score of  $23.76 \pm 10.02$ , and Optometry students’ mean score is  $23.44 \pm 8.23$ . The lowest mean score belongs to Medical Imaging Technology students ( $19.28 \pm 7.08$ ). One-way ANOVA test shows a statistically significant difference between groups of participants in the two variables Level of Education and Major ( $p < 0.05$ ).

**4. DISCUSSION**

In this study, students demonstrated recognition of some common risk factors of cervical cancer but did not have complete knowledge about the symptoms. The results show that the percentage of students correctly identifying each symptom is low, and most statistics are lower than previous studies [5, 6, 7, 9]. Students’ knowledge about HPV types that cause genital warts and cervical cancer is also low. Meanwhile, in a study carried out by Alsous and colleagues, the rate of students correctly recognizing these HPV types was much higher;

up to 65.1% of students correctly recognized the HPV types that cause genital warts, and 70.4% of students correctly recognized HPV types that cause cervical cancer [7]. The most correctly recognized route of HPV transmission by students is sexual contact (86.7%). However, many students still choose the wrong answer to this question when they think that the patient's blood (24.9%) can transmit HPV. This result is higher than the previous research [6]. Besides, there is still a tiny percentage of students choosing other incorrect answers such as patients coughing and sneezing (2.9%), hugging and holding hands with the patient (1.9%), and using the same utensils (2.8%). These results are lower than in Nguyen Thi Xuan Lieu and colleagues' study [6]. Most of the students correctly recognized one of the associated diseases when infected with HPV, which is genital warts (62.2%). However, many students chose the wrong answers, which are ovarian cancer (46.6%) and breast cancer (11.4%). These figures are lower in research conducted on fifth-year Pharmacy students of Nguyen Tat Thanh University [6]. The results of students' knowledge about cervical cancer in the current study are also lower than a study about Knowledge and Attitudes about Early Detection of Cervical Cancer of students at Hanoi University of Medicine in 2020 as these are 5th-year and 6th-year medical students [8].

Most students have heard about the screening program and were aware of the importance of participating in cervical cancer screening. However, students did not have proper knowledge about women's age to participate in screening programs and cervical cancer screening tests. This result is similar to Le Thi Bich Ngoc and Duong Thi Tu Ngoc's study on first-year nursing students at Thai Nguyen University of Medicine and Pharmacy [5]. Only 21.1% of students are aware of the recommended age for HPV vaccination, and 53% of students are aware that men also need to take the HPV vaccine. Of 400 students who knew about the HPV vaccine, 115 students (28.7%) participated in the vaccination program, which is lower than the study at Nguyen Tat Thanh University (33%) [6] or

the study at Hai Duong University of Medical Technology (39.87%) [9]. The number of unvaccinated students (285 students, 71.3%) is worrying because there are still many students who do not pay much attention to their health. The majority of the unvaccinated students intend to get HPV vaccination when up to 53% of students will very likely, and 32% of students will likely take the vaccine. When asking specifically about the reason why students have not participated in vaccination, results show that the main reason comes from the price of the vaccine (68.4%). In the Nguyen Tat Thanh University study, the price of the vaccine is also the main reason why students are hesitant to take the vaccine [6]. On the other hand, reducing the risk of cervical cancer is the main reason why students decide to take the vaccine (95%). This result shows that many students are also conscious of self-educating about HPV vaccines to prevent HPV and cervical cancer actively.

The total score of the questionnaire is 50 points, and the mean score of the students participating in the survey is  $23.76 \pm 8.87$ . In detail, the results show that knowledge of HPV and cervical cancer of the students is not high, while their awareness of the importance of screening and preventing cervical cancer is quite good. When grouping the participants by Gender and comparing the average scores between the two groups using the T-test, the data shows no statistically significant difference between these two groups. This result is different from the study by Alsous and colleagues [7], and this difference may be due to the uneven ratio of males and females in the current study. The Research Team also grouped students according to Level of Education and compared the average scores between these groups using the One-way ANOVA test. The result shows that there is a statistically significant difference between groups ( $p < 0.05$ ), which is similar to the research carried out by Alsous and colleagues [7]. The results obtained when grouping subjects by Major also showed a statistically significant difference between groups ( $p < 0.05$ ). The highest mean score is from students majoring in Laboratory

Medical. This result means students in this major have better knowledge about HPV, cervical cancer, and methods of cervical cancer screen and prevention than students from other majors in this study. The research on cervical cancer knowledge of students majoring in Laboratory Medical at the Hai Duong University of Medical Technology also showed high results (96.7% of students have corrected knowledge compared to 4.3% of those with incorrect knowledge) [9]. In the Nguyen Tat Thanh University of Medicine and Pharmacy study on first-year nursing students' level of knowledge, the percentage of students who achieved passing scores was 56.1% (the figure for failing scores was 43.9%) [5]. From these research results, educators can think of more effective curricular and extracurricular activities to help raise awareness of Nursing - Medical Technology students in particular, and Medical students in general about HPV and cervical cancer.

## 5. CONCLUSION

Nursing-Medical Technology students demonstrate awareness of the importance of cervical cancer screening and prevention. However, participants' knowledge of HPV and cervical cancer is not good, and the number of students taking part in HPV vaccination is still not very high. It is necessary to further promote education about HPV, cervical cancer, cervical cancer screening tests, and HPV vaccination for students right from the student's first year of study, especially for males.

Further research can be carried out on the students from other majors at Pham Ngoc Thach University of Medicine (students majoring in General Medicine /Pharmacy/ Oral and Maxillofacial/ Public Health, and others) or on the community to have a more general view of the current state of other target groups' awareness about cervical cancer, HPV, and the role of screening tests and prevention measures.

## LIST OF ABBREVIATIONS

HPV: Human papilloma virus  
PNT: Pham Ngoc Thach

## REFERENCES

1. Sung, H., Ferlay, J.; Siegel, R. L., Laversanne, M., Soerjomataram, I.; Jemal, A., & Bray, F. Global Cancer Statistics 2020: GLOBOCAN Estimates of Incidence and Mortality Worldwide for 36 Cancers in 185 Countries. *CA Cancer J Clin.* 2021 May;71(3):209-249. doi: 10.3322/caac.21660.
2. WHO. Cervical cancer. 2022. Viewed 11 March 2023, available from <<https://www.who.int/news-room/fact-sheets/detail/cervical-cancer>>.
3. Chesson, H. W., Dunne, E. F., Hariri, S., & Markowitz, L. E. The Estimated Lifetime Probability of Acquiring Human Papillomavirus in the United States. *Sexually Transmitted Diseases.* 2014 Nov;41(11):660-4. doi: 10.1097/OLQ.000000000000193.
4. Bộ Y Tế. Hướng dẫn dự phòng và kiểm soát ung thư cổ tử cung [Guideline for cervical cancer prevention and control]. Quyết định số: 2402/QĐ-BYT ngày 10 tháng 6 năm 2019.
5. Lê Thị Bích Ngọc & Nguyễn Thị Tú Ngọc. Thực trạng kiến thức, thái độ, về ung thư cổ tử cung và dự định phòng ngừa của sinh viên Điều dưỡng năm thứ nhất tại Trường Đại học Y Dược Thái Nguyên năm 2018 [Knowledge, attitude and preventive intention about cervical cancer of the first-year Nursing students in Thai Nguyen University of Medicine and Pharmacy in 2018]. *Tạp chí Khoa học và Công nghệ Đại học Thái Nguyên*, 2019, 194(1), tr. 27-34.
6. Nguyễn Thị Xuân Liễu & Dương Huệ Phương. Khảo sát kiến thức về ung thư cổ tử cung và tiêm vaccine ngừa HPV của nữ sinh viên khoa Dược năm thứ 5 Đại học Nguyễn Tất Thành [Surveying fifth-year students' awareness about cervical cancer and HPV vaccination in Department of Pharmacy at Nguyen Tat Thanh University]. *Tạp chí Khoa học & Công nghệ.* 2020; 3(2).
7. Alsous, M. M., Ali, A., Al-Azzam, S., Karasneh, R., & Amawi, H. Knowledge about cervical cancer and awareness about human papillomavirus vaccination among medical students in Jordan. *PeerJ.* 2021 Jun 17;9:e11611. doi: 10.7717/peerj.11611.

8. Nguyễn, T. T. H., Phạm, T. T. T., Dzung H., H., & Tran, H. M. Kiến thức, thái độ về phát hiện sớm ung thư cổ tử cung của sinh viên trường Đại học Y Hà Nội năm 2020 và một số yếu tố liên quan [Knowledge and attitude towards early detection of cervical cancer among students at Ha Noi Medical University in 2020 and some associated factors]. Tạp chí Y học Việt Nam. 2023; 521(2), tr.76-81. <https://doi.org/10.51298/vmj.v521i2.4046>.
9. Phạm, M. T., Nguyễn, T. G., & Nguyễn, T. H. Kiến thức, thái độ, thực hành tiêm vắc xin phòng ung thư cổ tử cung của sinh viên nữ Khoa Xét nghiệm Trường Đại học Kỹ thuật Y tế Hải Dương năm 2021 [Knowledge, attitude and practice of cervical cancer vaccination among female students of the laboratory of Hai Duong University of Medical Technology in 2021]. Tạp Chí Y học Việt Nam. 2023; 526(1A), tr.304-308. <https://doi.org/10.51298/vmj.v526i1A.5352>.