

KNOWLEDGE OF HPV VACCINES AND CERVICAL CANCER SCREENING AMONG FULL-TIME SECOND-YEAR MEDICAL STUDENTS IN CAN THO UNIVERSITY OF MEDICINE AND PHARMACY

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ABSTRACT

Background: Cervical cancer is the second most common cause of cancer-related death among women worldwide, with over 500,000 new cases diagnosed annually and 50% mortality rate in Asia. All women are at risk for cervical cancer, most often from 42 to 58 years old. However, we can prevent it by screening tests and the HPV vaccines (HPV is the main cause of cervical cancer). When cervical cancer is found early, it is highly treatable (about 90-100%). As one of the directly involved people in the prevention and treatment of this disease in the future, a medical student needs to grasp the basic knowledge to properly advise patients about the benefits of HPV vaccination as well as perform cervical cancer screening tests according to different ages. Therefore, the topic "The knowledge of HPV vaccines and cervical cancer screening among full-time second-year medical students of Can Tho University of Medicine and Pharmacy" was conducted to determine the acquainted rate of HPV vaccines and cervical screening. **Objectives:** to determinine the ratio of knowledge among students on HPV vaccines and cervical cancer screening. **Materials and methods:** The study used a cross-sectional descriptive design to assess full-time medical second-year students' knowledge. A pre-test questionnaire was administered to students. Research conducted from January 12th, 2022 to July 1st, 2022 including 234 students. **Results:** Participants were mainly students under the age of 20, accounting for 56%. Most students received information about HPV vaccination from the internet, accounting for 72.2%; from friends and relatives accounting for 66.7%, from hospitals and medical centers accounting for 31.5%. Research results show that the rate of well-informed about HPV vaccination was 67.9%; the rate of well-informed about cervical cancer screening was 8.2%. The rate of knowing the total injection dose is 3 doses accounting for 55.6%. Most students (90.2%) answered that cervical cancer can be screened; about 35.9% of students answered the age to start cervical cancer screening correctly. The percentage of students who knew the conditions to stop cervical cancer screening was 20.9%. **Conclusion:** The knowledge of HPV vaccines and cervical cancer screening among full-time second-year medical students of Can Tho University of Medicine and Pharmacy was thoroughly knowledgeable. **Keywords:** cervical cancer, HPV vaccines, screening cervical cancer, Can Tho University of Medicine and Pharmacy.

I. INTRODUCTION

Cervical cancer is the second most common cause of death in women globally. All women are at risk for cervical cancer, most often from 42 to 58 years old. However, they can be prevented by the HPV vaccines (HPV is the cause of cervical cancer) and cervical cancer screening tests.

Currently, HPV vaccination is widely available in the Vietnamese community. Still, the percentage of vaccinated females in the vaccination age range recommended by the Ministry of Health is low due to many reasons, one of which is the high cost of vaccines.

It is about the awareness of the young generation. However, women in the high-risk cervical cancer age group need to be screened to detect cervical cancer early so that necessary interventions can be taken. In Vietnam, the rate of women undergoing screening is still low, therefore the disease is detected at a late stage. This results in undesirable treatment results.

As one of the directly involved people in the prevention and treatment of this disease in the future, a medical student needs to grasp the basic knowledge to properly advise patients about the benefits of HPV vaccination as well as perform cervical cancer screening tests according to different ages. Therefore, the topic "The knowledge of HPV vaccines and cervical cancer screening among full-time second-year medical students of Can Tho University of Medicine and Pharmacy" was conducted to determine the acquainted rate of HPV vaccines and cervical screening.

II. MATERIALS AND METHODS

2.1. Research subjects

Inclusion criteria:

- Full-time 2nd year medical students at Can Tho University of Medicine and Pharmacy.
- Consent to participate in the study.

Exclusion criteria: Incomplete data collection table.

2.2. Research methods

Research design: cross-sectional descriptive design

Sample size and sampling method: Sampling from January 12th, 2022 to July 1st, 2022, collected a total of 234 samples by answering a self-completed survey through Google forms.

Research content: Describe common characteristics of research subjects.

Describe the knowledge of students in HPV vaccination and cervical cancer screening.

III. RESULTS

Our research collected 234 samples by answering a self-completed survey through Google Forms. 100% of the samples met the study criteria.

3.1. Characteristics of research subjects

Table 1. Distribution by sex and age group

		Frequency (n=234)	Rate (%)
Sex	Male	94	40
	Female	140	60
Age	≤ 20	131	56
	>20	103	44
Ethnicity	Kinh	208	88.9
	Khmer	9	3.7
	Chinese	17	7.4
Religion	None	199	85.2
	Buddhist	26	11.1
	Catholic	9	3.7

In our study, the ratio of female to male participants was 3/2. Participants were mainly students under the age of 20, accounting for 56%. The percentage of students from Kinh ethnicity and no religion accounted for the majority of 88.9% and 85.2%, respectively.

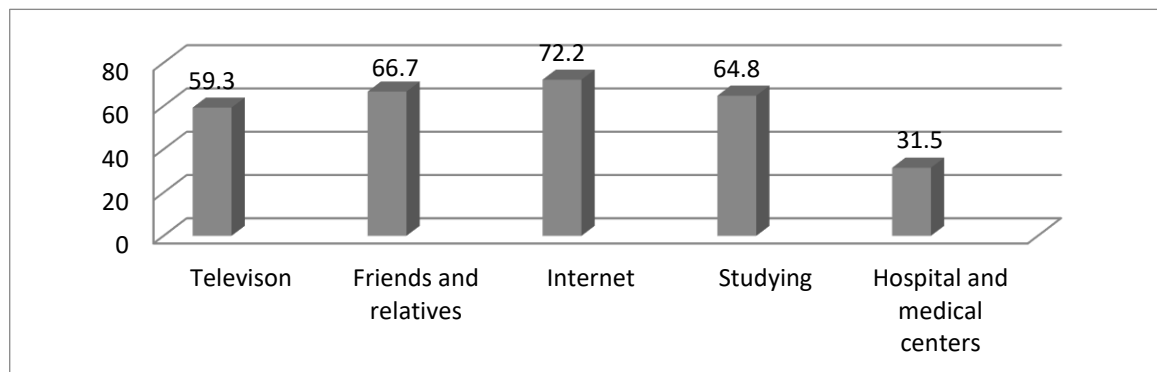


Figure 1. Resources to provide information about HPV vaccines

3.2. Resources to provide information about HPV vaccines

Most students received information about HPV vaccination from the internet, accounting for 72.2%; from friends and relatives accounting for 66.7%. The percentage of students receiving knowledge from hospitals and medical centers accounted for 31.5% which was the lowest.

3.3. Knowledge about HPV vaccination

Table 2. Knowledge about HPV vaccination

Knowledge about HPV vaccination	Correct n (%)	Incorrect n (%)
The correct name of the vaccine is Cervarix/Gardasil	184 (78.6)	50 (21.4)
Gardasil can prevent more types of HPV than Cervarix	130 (55.6)	104 (44.4)
The cost of vaccination for the whole process is from 4 to 5 million VND	39 (16.7)	195 (83.3)
The recommended injection age is 9-26	159 (67.9)	75 (32.1)
The total injection dose is 3 doses	130 (55.6)	104 (44.4)

In our study, the rate of knowing the correct name of the vaccine is called Cervarix/Gardasil accounting for 78.6%. The rate of knowing that Gardasil prevents more types of HPV than Cervarix was 55.6%. The rate of knowing the cost of vaccination for the whole process is from 4-5 million VND was nearly 5 times lower than the rate of the unknown. The rate of knowing the total injection dose is 3 doses accounting for 55.6%.

3.4. General knowledge of cervical cancer screening content

Table 3. General knowledge of cervical cancer screening content

Cervical cancer screening content	Correct (n%)	Incorrect (n%)
Cervical cancer can be screened	211 (90.2)	23 (9.8)
Age to start screening	84 (35.9)	150 (64.1)
Conditions to stop screening	49 (20.9)	185 (79.1)

Most students answered that cervical cancer can be screened, accounting for 90.2% ; 35.9% of students answered the age to start cervical cancer screening correctly. The percentage of students who knew the conditions to stop cervical cancer screening was 20.9%.

3.5. Knowledge of tests used to screen for cervical cancer

Table 4. Knowledge of tests used to screen for cervical cancer

Tests used to screen for cervical cancer	Correct n (%)	Incorrect n (%)
HPV test	217 (92.6)	17 (7.4)
Pap test	182 (77.8)	5 (22.2)
Lugol test	87 (37)	147 (63)
VIA test	61 (25.9)	173 (74.1)
Knowledgeable	191 (81.5)	43 (18.5)

According to the table above, the majority chose the HPV test, accounting for 92.6%. The percentage of students choosing Pap test was 77.8%. The Lugol test and VIA test had fewer options, accounting for 37% and 25.9%, respectively. Well-informed of tests used to screen cervical cancer was calculated when the subject had 2 correct answers, accounting for 81.5%.

3.6. Knowledge and knowledge level of HPV vaccines and cervical cancer screening

Table 5. Knowledge and knowledge level of HPV vaccines and cervical cancer screening

	Frequency (n=54)	Rate (%)
Knowledge of HPV vaccines		
Correct	159	67.9
Incorrect	75	32.1
Knowledge level of cervical screening		
Excellent	74	31.6
Good	56	23.9
Average	29	12.4
Poor	75	32.1
Knowledge of cervical cancer screening content		
Correct	190	81.2
Incorrect	44	18.8
Knowledge level of cervical cancer screening content		
Excellent	49	20.9
Good	35	15
Average	106	45.3
Poor	44	18.8

The correct knowledge about HPV vaccines and cervical cancer screening content of students accounted for a relatively high rate of 67.9% and 81.2% respectively. However, the students had poor knowledge about HPV vaccination accounting for 32.1% and the dominant level of knowledge about cervical cancer screening content was average, accounting for 45.3%.

IV. DISCUSSION

4.1. Knowledge of HPV vaccination

In our research, 100% of the students answered that they had heard general information about HPV vaccines before. Compared with the study of Vico Chung Lim Chiang (2015) on students at local universities in Hong Kong, this rate accounted for 92.2% [2]. Perhaps because our research subjects are medical students the frequency of accessing health information will be higher than that of general students. The study of Jyoti Singh et al (2021) suggests that the overall awareness and knowledge about cervical cancer, HPV

and HPV vaccination was high among college students and associated with sex, education and also family background [3].

Among students who have heard of HPV vaccines before, only 78.6% knew the correct name of the vaccine as Cervarix/Gardasil. About 55.6% knew correctly that Gardasil prevents more types of HPV compared to Cervarix. In addition, up to 83.3% of students answered incorrectly about the cost of vaccines. This shows that students have indeed heard about the HPV vaccination, but the depth of understanding about vaccine information is still quite hesitant in approaching. This means we should advise future patients as well as their relatives to get more information about vaccines together with the costs, therefore patients will have more choices in preventing HPV.

In the question about the recommended age to get vaccinated, the percentage of students who answered correctly about the age of vaccination was from 9-26 years old, accounting for 67.9%. This is the age recommended by the Ministry of Health and compared with research by Kha Thi Tieu Nguyen on mothers with 1-26 years old daughters, the percentage of mothers who answered this question correctly was 47.3 % [4].

The total injection dose is 3 doses and more than half of the students answered this question correctly, accounting for 55.6% which is not a very high number. This may lead to errors in the immunization consultation process of future medical students, such as not being able to advise on the number of injections, leading to the loss of effectiveness of the HPV vaccine. In addition, the price for the whole injection process is quite high compared to the general price of other vaccines in Vietnam, so knowing the price partly determines whether to inject or not to inject the vaccine, therefore cervical cancer prevention can be measured flexibly. The results of Noel T. Brewer in "Predictors of HPV vaccine acceptability: A theory-informed, systematic review" also mentioned that cost is one of the barriers for students to accept receiving the HPV vaccination or not [5]. Therefore, knowing the cost of vaccines is necessary for medical students in consulting people throughout the process of deciding to get vaccinated.

Although the HPV vaccination is now widely available in the community, 32.1% of students had incorrect knowledge of HPV vaccines. Poor level accounted for the most (32.1%). This number shows that most medical students in the study were not interested in vaccination. The study of Alsous MM et al (2021), shows that more than half of the students (62.5%) reported inadequate information about cervical cancer and the HPV vaccine as an obstacle preventing the receipt of the vaccine or advice about taking HPV vaccination [6]. This indicates an inadequate awareness of the HPV vaccine which was similar to a result from a study of university students in India [7].

4.2. Knowledge of cervical cancer screening content

Study results show that 90.2% of students answered correctly that cervical cancer can be screened. However, up to 64.1% of students answered incorrectly about the age to start screening. Most participants think the age of high-risk will be in the menopause phase, so it is only then that women need to be screened without knowing the possible age of getting cervical cancer. Perhaps cervical cancer in rural areas is still a strange concept to them.

Up to 79.1% incorrectly answered about the condition to stop screening. Since the students are only in 2nd year, this question is probably beyond their knowledge.

Up to 81.5% of the students had correct knowledge about the tests used to screen for cervical cancer. The majority chose the HPV test (92.6%). The simple reason is we all know that HPV is one of the causes of cervical cancer. Meanwhile, 77.8% of students chose the Pap test which is a high number. The results of Sefonias Getachew 's study on “Cervical cancer screening knowledge and barriers among women in Addis Ababa, Ethiopia”, about 56.3% of women lack of knowledge about Pap test [8]. Although the subjects are different, the figure of 77.8% shows that 2nd-year medical students of Can Tho University of Medicine and Pharmacy (CTUMP) have a deeper interest in this subject. A study by Saranya Manikandan et al (2019) indicates that most of the students who participated in our study were not aware of cervical cancer screening and prevention [9].

Through our research, up to 81.2% of the 2nd-year medical students in CTUMP had the right knowledge about the content of cervical cancer screening. Most of them were at the average level (accounting for 45.3%). A study by Nasar U. Ahmed (2019) confirmed a correlation between the receipt of Pap tests with knowing the causes and prevention mechanisms of cervical cancer. Adequate knowledge about cervical cancer causes, and prevention/control strategies may help to improve adherence to Pap smear testing in college students [10].

V. CONCLUSION

The full-time 2nd year medical students at CTUMP were knowledgeable about HPV vaccination as well as cervical cancer screening. However, the level of knowledge is still quite low, specifically about the HPV vaccine is mainly at a low level and cervical cancer screening predominates at an average level.

REFERENCES

1. Muhammad Daniyal, Naheed Akhtar, Saeed Ahmad, et al. Update knowledge on cervical cancer incidence and prevalence in Asia. *Asian Pac J Cancer Prev*. 2015. 16(9), 3617-20. doi: 10.7314/apjcp.2015.16.9.3617.
2. Vico Chung Lim Chiang, Ho Ting Wong, Pui Chun Au Yeung, et al. Attitude, Acceptability and Knowledge of HPV Vaccination among Local University Students in Hong Kong. *Int. J. Environ. Res Public Health*. 2018. 13(486). doi:10.3390/ijerph13050486.
3. Jyoti Singh, Sulakshana S. Baliga M.D. Knowledge regarding cervical cancer and HPV vaccine among medical students: A cross-sectional study. *Clinical Epidemiology and Global Health*. 2021. 2021(9), pp.289-292. <https://doi.org/10.1016/j.cegh.2020.09.012>.
4. Nguyen Thi Tieu Kha, Knowledge, attitudes and behaviors on HPV Vaccination among mothers with 1-26 years old-daughters at An Binh ward, Ninh Kieu district, Can Tho city. Graduate thesis, Can Tho University of Medicine and Pharmacy. 2013.
5. Sara Cooper, Bey-Marrié Schmidt, Jill Ryan, et al. Factors that influence acceptance of human papillomavirus (HPV) vaccination for adolescents: a qualitative evidence synthesis *Cochrane Database Syst Rev*. 2019 (9). CD013430. Published online 2019 Sep 20. doi: 10.1002/14651858.CD013430.
6. Alsous MM, 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 9, e11611. <https://doi.org/10.7717/peerj.11611>.
7. Aparna Narayana Gollu, Chaitali Ashutosh Gore. Knowledge, Awareness and Attitude of Medical Students Regarding HPV Infection and HPV Vaccination. *Asian Pacific Journal of Cancer Care*. 2021. 6 (1). doi 10.31557/APJCC.2021.6.1.41-46.
8. Sefonias Getachew ,Eyerusalem Getachew,Muluken Gizaw, et al. Cervical cancer screening knowledge and barriers among women in Addis Ababa. *Ethiopia Published*. 2019. <https://doi.org/10.1371/journal.pone.0216522>.

9. Saranya Manikandan, Subasish Behera, Nageswarao Madhulika Naidu et al. Knowledge and Awareness Toward Cervical Cancer Screening and Prevention Among the Professional College Female Students, *J Pharm Bioallied Sci.* 2019. 11(2), S314–S320. doi: 10.4103/JPBS.JPBS_21_19.
 10. Nasar U. Ahmed, Patria Rojas, Abraham Degarege. Knowledge of Cervical Cancer and Adherence to Pap Smear Screening Test Among Female University Students in a Multiethnic Institution, USA, *Journal of the National Medical Association.* 2019. 112(3), pp. 300-307. <https://doi.org/10.1016/j.jnma.2020.03.007>.
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