

## Overview Of HPV(Human Papillomavirus) Vaccine Acceptance In Students

Rani Tiara Desty<sup>1)</sup>, Dwi Subarti<sup>2)</sup>

<sup>1,2)</sup> Poltekkes Kemenkes Surakarta

e-mail:

<sup>1)</sup> [destyranitiara@gmail.com](mailto:destyranitiara@gmail.com)

<sup>2)</sup> [dwisubarti01@gmail.com](mailto:dwisubarti01@gmail.com)

### ABSTRACT

*Cervical cancer ranks as the third most frequently diagnosed cancer in women globally, with over 75% of cases occurring in developing countries. In Indonesia, cervical cancer is the second most prevalent cancer. The government is developing a strategy to prevent cervical cancer through HPV vaccination, including for unmarried teenagers. This is supported by the fact that sexual intercourse is becoming more common among people in the 17-21 age group. Many teenagers are afraid to get the HPV vaccine. Misconceptions can influence acceptance of cervical cancer management and prevention. The aim of this study is to determine the acceptance of the HPV vaccine as an early cervical cancer prevention method among pharmacy students. The research will be quantitative and descriptive with a cross-sectional approach. The study population was all pharmacy students in the class of 2024. A total sample of 142 students was taken for this study. The variable studied was student acceptance of the HPV vaccine. The instrument used was a Google Form questionnaire. Univariate analysis was used for data analysis. The results of the study on acceptance of the HPV vaccine among students show that the majority of respondents were female (93.7%). More than half (54.9%) of the respondents were 18 years old. Additionally, more than half (55.6%) of the respondents were unable to receive the HPV vaccine. Improving education about HPV vaccination among teenagers, especially students, is necessary so they can understand and accept the vaccine. As prospective health workers, they can also become role models for changing health behavior.*

*Keywords: Students, Receiving, HPV Vaccine.*

## Introduction

Cervical cancer is the third most frequently occurring cancer in women worldwide, following breast and lung cancers, with over 75% of cases found in developing nations (Chew et al., 2021). According to the International Agency for Research on Cancer (IARC), there were an estimated 408,661 new cases and 242,988 deaths from cervical cancer in Indonesia by 2022. Furthermore, IARC predicts a 77% increase in cancer cases by 2050. Cervical cancer is the second most common cancer in Indonesia (MOH, 2024). According to Sihite (2022), states that several risk factors contribute to the development of cervical cancer, including engaging in sexual activity before the age of 20, having multiple sexual partners, smoking, having many children, low socioeconomic status, long-term use of birth control pills (with positive or negative HPV status), sexually transmitted infections, and weakened immune function. Having sexual intercourse under the age of 17 can cause cancer cells to grow in the female genital organs. This is because cell changes in the cervix occur during the age range of 12 to 17 years (Sihite & Siregar, 2022).

Putri (2022) states that cervical cancer is usually found in women aged 33 to 54. However, nowadays, the disease often affects adolescent girls and young women aged 21-22 (Putri, 2022). In developing countries, 46,000 women between the ages of 15 and 49 are infected with cervical cancer (Dartiwen & Aryanti, 2022). This may be due to increasingly free association and many cases of sexual intercourse among 17- to 21-year-olds (Wulandari & Aini, 2020).

The WHO Southeast Asia Region recently created cervical cancer control strategies for countries in the Southeast Asia Region. Indonesia has established a National Action Plan (NAP) to eliminate cervical cancer by 2023, which will help accelerate global efforts to eliminate the disease. The Ministry of Health will provide follow-up vaccinations to 15-year-olds and adult women aged 21-26 upon request (MOH, 2024).

Before marriage and during adolescence, women should start making health investments for themselves, such as getting vaccinated against HPV. This is because many adolescents are sexually active (Kholifatullah & Notobroto, 2023). Pharmacy students are included in the late adolescent category and will be health workers. Health workers act as role models in changing health behaviors.

In 2016, Sylraini's research found that 44% of respondents learned about the HPV vaccine online, and 42% were afraid to get vaccinated (Sylraini et al., 2016). Beliefs, knowledge, and attitudes are among the many factors that influence a person's decision to receive a vaccine (Frianto et al., 2020). Insufficient knowledge about the purpose and benefits of cervical cancer vaccination, as well as its side effects, may lead to incorrect beliefs about it. These false beliefs affect acceptance of cervical cancer management and prevention; for example, people may not want to be vaccinated out of fear of side effects. Ignorance about cervical cancer vaccination can result in many women not receiving the vaccine, which can lead to an increase in cervical cancer patients and deaths in Indonesia (Chew et al., 2021).

The target population for cervical cancer vaccination is adolescents, including students. If students, especially pharmacy students who serve as role models for health behavior, accept the vaccine, then the vaccine administration program can succeed. The aim of this study is to determine the acceptance of HPV vaccination as an early prevention method for cervical cancer among pharmacy students.

## Methodology

This study will use a quantitative, descriptive, cross-sectional approach. This study uses primary data. The population studied was all pharmacy students in the class of 2024. A total of 142 students were sampled using total sampling. The study took place at the Department of Pharmacy at Poltekkes Kemenkes Surakarta. Data collection took place in January 2025. Data were collected using a survey method. Primary data was obtained by filling out Google Forms. The variable in this study was acceptance of the HPV vaccination.

In this study, the instrument used was a questionnaire that had previously been tested for validity and reliability which had been declared valid and reliable with a Cronbach Alpha of 0.763. The questionnaire explored information related to the characteristics of the respondents, including age and gender, as well as information related to HPV and public acceptance of the HPV vaccine. Six questions were declared valid and included topics such as vaccine safety, side effects, urgency of vaccination, whether the vaccine is halal, and effectiveness of the vaccine. The questions were measured using three answer options: "Disagree," "Undecided," and "Agree." The data were processed by describing each answer option as frequencies and percentages. Data processing used IBM SPSS Statistics 24. Data analysis in this study was conducted univariately.

## Results And Discussion

### 1. Respondent Characteristics

The respondents in this study were students in the Diploma III Pharmacy Program at Surakarta Poltekkes Kemenkes who met the inclusion criteria. Respondent characteristic data includes age and gender. This data can be seen in Table 1.

**Tabel 1 Characteristics of respondents ( Source : Primary data)**

No.	Characteristics of respondents	Frequency (f)	Percentage (%)
1.	Age (years)		
	17	4	2,8 %
	18	78	54,9 %
	19	60	42,3 %
2.	Gender		
	Male	9	6,3%
	Female	133	93,7%

Table 1 shows the results of the data processing for the characteristics of the respondents. This study examines the characteristics of respondents based on gender and age. The target population for this study was students in the class of 2024, aged 18-21. The results showed that more than half of the respondents were 18 years old, with 54.9% being in this age group. More respondents were female (93.7%) than male. These results align with those of Biyazin's (2022) study on willingness to accept HPV vaccination, which found that most respondents were 16-20 years old and female. Age difference is an important predictor of health acceptance. A study conducted by El-Elimat et al. in Jordan found that the older age group (i.e., those over 35 years old) had a lower level of vaccine acceptance, with a p-value of 0.001, compared to the younger age group (i.e., those under 25 years old) (El-Elimat et al., 2021). Gender may also influence vaccine acceptance. The majority of university students are female and may exhibit greater group conformity than males (Wang et al., 2015).

## 2. HPV Related Information

**Table 2 HPV-related information (Source : Primary Data)**

No.	Kategori	Frekuensi (f)	Persentase (%)
1.	Have you ever heard of HPV vaccination?		
	a. Yes	123	86,6
	b. No	19	13,4
2.	HPV vaccine information sources:		
	a. Internet	101	80,8
	b. Health worker	26	20,8
	c. Electronic media (TV, Radio)	20	16
	d. Friends	12	9,6
	e. Family	16	12,8
	f. Teacher/Lecturer	30	24
3.	Your family member/relatives have cervical cancer:		
	a. Yes	3	2,1
	b. No	139	97,9

Table 2 indicates that a higher proportion of respondents have been exposed to information concerning HPV vaccination (86.6%) compared to those who have not. These findings correspond with the research conducted by Biyazin (2022), which reported that 70.2% of respondents were aware of HPV vaccination. The majority of this information was sourced from the internet (80.8%), while a relatively small fraction received information from friends (9.6%). These results are consistent with the work of Sylraini (2016), who also discovered that most individuals acquire HPV vaccine information through online channels. The internet is preferred due to its accessibility, speed, practicality, and efficiency for information retrieval. Nevertheless, it is crucial to recognize that obtaining valid and reliable health information online presents challenges, particularly for individuals with low health literacy

(Lachlan et al., 2021). According to Desty (2022), respondents should broaden their perspectives by actively seeking information and employing critical thinking skills. They ought to validate news encountered on social media by consulting official government websites and referring to credible sources (Desty & Arumsari, 2022).

Among the survey participants, only 2.1% reported having family members who experienced cervical cancer. his data is consistent with Mihretie’s (2022) research, which found that a small fraction of family members had a history of cervical cancer (Mihretie et al., 2022). Furthermore, Frianto (2020) suggests that family background plays a role in HPV vaccine acceptance, as his study shows that individuals without a family history of cervical cancer are less likely to support the vaccine (Frianto et al., 2020).

### 3. Acceptablillity HPV Vaccine

**Table 3 Results of Answers to Each Question (Source : Primary Data)**

No	Questionnaire questions	Yes		Undecided		No	
		(f)	%	(f)	%	(f)	%
1.	I feel that the HPV vaccine is safe to use	106	74,6	35	24,6	1	0,7
2.	I feel that the HPV vaccine can suppress the virus	107	75,4	27	19	8	5,6
3.	I feel that the HPV vaccine can cause side effects such as fever and painful sensation after injection, and nausea.	83	58,5	48	33,8	11	7,7
4.	Actually, humans do not need the HPV vaccine as long as they practice safe sexual behavior.	65	45,8	31	21,8	46	32,4
5.	I still question the halalness of the HPV Vaccine.	69	48,6	41	28,9	32	22,5
6.	I feel that the effectiveness of the HPV Vaccine is questionable	57	40,1	44	31	41	28,9

Based on the analysis of the responses to each question in Table 3, 74.6% of respondents believed that the HPV vaccine was safe. Seventy-five point four percent of respondents felt that the HPV vaccine can suppress the virus. However, 58.5% of respondents felt that the vaccine can cause side effects, such as fever, painful sensations after injection, and nausea. Forty-five point eight percent of respondents felt that humans do not need the HPV vaccine because they practice safe sexual behavior. Forty-eight point six percent of respondents still questioned the halalness of the HPV vaccine. Forty percent felt that the effectiveness of the HPV vaccine was questionable. Bloom's Taxonomy divides learning objectives into three main areas: cognitive, affective, and psychomotor domains. According to Bloom and Krathwohl, acceptance is categorized under the affective domain. Acceptance is the willingness to be aware of a phenomenon in the environment. It includes passively receiving information about problems, situations, symptoms, values, and beliefs. Sensitivity to external stimuli or simulations is also known as

acceptance (Bloom, 1956). This study uses a questionnaire with six types of questions, as listed in Table 3, to measure respondents' acceptance of the HPV vaccine.

The perceptions of safety related to the HPV vaccine are pivotal for its acceptance within the community. According to research findings, an impressive 74.6% of participants regard the HPV vaccine as safe. These results align with the studies conducted by Sari et al. (2014), which indicate that a substantial number of individuals recognize the benefits of HPV vaccination, including its effectiveness in preventing cervical cancer, bolstering personal security, and enhancing overall quality of life (Sari et al., 2020). However, apprehensions concerning potential side effects pose a significant obstacle to the implementation of HPV vaccination initiatives. This fear may be rooted in insufficient understanding of the possible side effects associated with the vaccine (Sari et al., 2020). Specifically, 58.5% of respondents conveyed worries about experiencing adverse effects from the HPV vaccination. Noteworthy side effects may encompass localized bruising at the injection site, headache, myalgia, mild fever (up to 37.7°C), moderate fever (up to 39°C), mild allergic reactions (such as pruritus, nausea, and hives), and, in rare instances, severe allergic reactions (CDC, 2015).

Given that a significant portion of Indonesia's demographic identifies as Muslim and adheres to religious principles, the importance of halal-certified products is paramount. In a recent study, it was found that 48.6% of respondents expressed concerns regarding the halal status of vaccines. The Director of Health Surveillance and Quarantine at Indonesia's Ministry of Health stated that recently introduced vaccines such as the HPV vaccine for cervical cancer prevention and the PCV vaccine for pneumonia have been certified halal by the Islamic Food and Nutrition Council of America (IFANCA) (Detik, 2024). Furthermore, 40.1% of participants voiced skepticism regarding the efficacy of these vaccines. Notably, some individuals doubted the HPV vaccine's capacity to effectively prevent cervical cancer, a viewpoint that contradicts the guidelines set forth by the Ministry of Health, which emphasize that HPV vaccination is pivotal in mitigating the risk of HPV infection and, consequently, reducing the incidence of cervical cancer (Kemenkes, 2024).

**Tabel 4 Vaccine HPV Acceptanctabillity (Source : Primary Data)**

Acceptanctabillity Vaccine	Frekuensi	Persentase
Acceptance	63	44,4
Less accepting	79	55,6

The findings from the univariate analysis categorized vaccine acceptance based on the median value due to the abnormal distribution of the data. Respondents with an acceptance score at or below the median were classified as less accepting of the vaccine, whereas those with scores above the median were classified as accepting. The results revealed that a greater proportion of

respondents, specifically 55.6%, fell into the less accepting category. This underscores the necessity for enhanced public education initiatives, as the dissemination of information is crucial in the knowledge acquisition process. It is vital to provide comprehensive information regarding vaccine safety, effectiveness, halal status, and emergency protocols to the public. Additionally, it is essential to address and correct misconceptions surrounding vaccines (Arumsari et al., 2021).

A significant barrier to increasing acceptance of the HPV vaccine is the prevalent lack of knowledge related to the virus and its vaccination (Adjei Boakye et al., 2017). A previous study in Hong Kong indicated that higher awareness of HPV and more positive perceptions of the HPV vaccine were associated with greater willingness to receive the vaccine and a stronger intention to recommend it to others (Liu, 2018). These findings align with previous research conducted in various countries, which indicated that HPV-related educational initiatives effectively raised vaccine acceptance levels (Kwang et al., 2016). This body of evidence advocates for healthcare providers, alongside community stakeholders such as parents and educators, to recognize the significance of effectively communicating with young adolescents about HPV infections and the HPV vaccine as they approach the recommended vaccination age (Zhang et al., 2021).

The results demonstrated that participation in adolescent sexual health education and enhanced knowledge about vaccines significantly increased individuals' willingness to receive the HPV vaccine. As HPV is a sexually transmitted infection, incorporating information about HPV and its vaccine into current adolescent sexual health curricula is appropriate (Zhang & Zhao, 2017). Moreover, another study found that parents and teachers significantly influence the decision to vaccinate against HPV, indicating an urgent need for educational initiatives directed at these key groups (Zhang et al., 2021).

## **CONCLUSION**

This study investigates the acceptance of the HPV vaccine among university students, revealing that a significant majority of the participants were female, comprising 93.7% of the sample. Additionally, over half of the respondents were aged 18 years (54.9%). The data indicates that 86.6% of the respondents had previously encountered information regarding HPV vaccination, with the internet serving as the primary source of information for 80% of students. Notably, only 2.1% reported having family members affected by cervical cancer. A substantial proportion, 74.6%, believed that the HPV vaccine is safe for use, while 75.4% acknowledged its potential to suppress the virus. However, 58.5% expressed concerns about possible side effects associated with the vaccine. Furthermore, 45.8% of respondents felt that the HPV vaccine is unnecessary due to their practice of safe sexual behavior. Concerns about the halal status of the HPV vaccine were raised by 48.6% of participants, and 40% felt uncertain about its effectiveness. Ultimately, over half (55.6%) were unable to accept the HPV vaccine. This highlights an urgent need for enhanced educational efforts regarding HPV

vaccination aimed at adolescents, particularly students, as they have the potential to become influential leaders in promoting health behaviour change.

### **Declaration of Competing Interest**

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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