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Research Article

Knowledge-related Human Papillomavirus Vaccination: A Study of Indonesian Women

Astri Mutiar^{1*} | Tiara Wulandari¹ | Nunung Nurhayati¹ | Dewi Marfuah¹ | Suci Noorhayati¹

¹Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat, Bandung, Jawa Barat – Indonesia

*contact

astrimutiar@gmail.com

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Abstract

Aims: Human papillomavirus (HPV) is a sexually transmitted virus that can lead to various diseases, most known as cervical cancer's etiology. HPV vaccination is one of the primary prevention strategies to reduce HPV transmission. To increase vaccination rates, it is essential that women have a good knowledge of receiving the HPV vaccine. The purpose of the study was to explore the knowledge of HPV vaccination among Indonesian women.

Methods: A cross-sectional study was conducted among 462 Indonesian women recruited by convenience sampling on March to May 2022. The adapted questionnaire of knowledge with 28 items was used with Cronbach's Alpha score estimated at 0.838. Women who are 15 to 49 years old, able to understand and speak the Indonesian language, and have a gadget were included in this study. Women who already get HPV vaccination are excluded. Univariate statistics were used to describe Indonesian women's knowledge of HPV Vaccination.

Results: The research shown that the mean age of the respondents is 23.17 ± 5.065 . Half of the respondent level of education is college as many as 245 people (53%). Half of the respondents are employed as many as 239 people (51.7%). The average knowledge is 16.02 with a standard deviation (SD) of 6.43, the knowledge value indicates less knowledge of HPV vaccination among women. In the item analysis, found that most respondents answer incorrectly to the question "HPV testing is done to show whether the HPV vaccine is needed?" (4.3%). Most of the respondents shown did not know answered the question "HPV vaccine requires three doses" (59.3%). Most of the reasons for refusing to be vaccinated answered that the price of the vaccine was not affordable (45.5%).

Conclusion: Women's knowledge of the HPV vaccine was nearly low in this study. The campaign and effort to spread the information related to HPV vaccination are needed. Innovative media might be the best option to spread awareness. Studies with a large sample and broad range of area are preferable.

Keywords:

Cervical Cancer, Human papillomavirus, Indonesian Women, Knowledge, Vaccination

INTRODUCTION

HPV infection is the most common sexually transmitted infection, an estimated 75% of sexually active people are infected with HPV during their lifetime. HPV has many genotypes including HPV types 6 and 11 are the cause of 90% of cases of genital warts, while HPV types 16 and 18 are high-risk viruses, contributing to 70% of cervical cancer cases (1). Prevention of HPV infection can be done by providing education to avoid risk factors and HPV vaccination (2). The HPV vaccine is a safe and efficient vaccine that can prevent HPV infection from strains associated with six cancers caused by HPV (cervical, oropharyngeal vaginal, anal, penile, and vulva) (3). The HPV vaccine is currently part of national immunization programs in 62 countries. In Indonesia, the HPV vaccination program has still in the infancy stage (4).

The World Health Organization (WHO) recommends vaccinating girls with HPV aged 9-14 years. However, diseases caused by HPV, especially cervical cancer in Indonesia, often occur at the age of 15-44 years. Therefore, women of reproductive age need to vaccinate against HPV (2). The HPV vaccination rate in Indonesia in 2015 was 86.9%, but in 2017 it decreased by 50%. Due to the lack of information and knowledge obtained by women those who do the HPV vaccine have decreased. The HPV vaccination rate in Indonesia in 2015 was 86.9%, but in 2017 it decreased by 50%. Due to the lack of information and knowledge obtained by women those who do the HPV vaccine have decreased. Involving adolescents and parents is very important in nursing decisions, because it is part of the successful development of interventions, to increase confidence in the HPV vaccine (5).

Even though HPV vaccination does not integrate with the national immunization program yet. The research related to HPV vaccination in Indonesia remains less, small sample size, the uncomprehensive

questionnaire used, and only focus on students or parents of students' knowledge was held (2,6). A study to explore the knowledge of women across life spans is needed. Knowing the rate of knowledge of HPV vaccination could help to boost the innovative intervention to increase the uptake of vaccination.

METHODS

Research Design

A cross-sectional study was conducted in Indonesia from March to May 2022. The ethical consideration gets from Sekolah Tinggi Ilmu Keperawatan PPNI Jawa Barat ethical commission board with **III/027.1/KEPK/STIKEP/PPNI/JABAR/V/2022** as an ethical clearance number.

Population and Sample

Convenience sampling was used to recruit the sample. Sample size determination was calculated with G-Power. Women who are 15 to 49 years old, able to understand and speak the Indonesian language, and have a gadget (laptop, netbook, tablet, or smartphone) were included in this study. Women who already get HPV vaccination are excluded.

Measurement

The knowledge questionnaire was adapted from Waller, et al (7), regarding the demographic data of respondents which included age, gender, education, occupation, and place of residence, as well as to measure knowledge of the HPV vaccine. The questionnaire consisted of 28 question items which were grouped into seven thematic areas of general HPV knowledge; 1) the consequences of HPV on health; 2) HPV and cervical screening; 3) symptoms; 4) causes, risk factors, and transmission; 5) prevention and treatment; 6) prevalence; and 7) testing/vaccination. Questionnaire options using "true", "false", and "don't know". The higher the score, the higher the knowledge.

The validity test in this study showed a strong correlation between each subset of

items, with a value of $r = 0.415$. The score on the general knowledge section of HPV correlated 0.502 with the HPV test item score and 0.537 with the respondent's score on the vaccination item. Scores on the HPV test and vaccination subset items correlated by 0.553. The scale score for each item subset is significant ($p < 0.01$). The Cronbach's Alpha of this questionnaire is 0.838 and a test-retest of 0.79. Internal consistency and test-retest reliability have good internal consistency and test-retest

reliability. The researcher has done Forward-Backward translation (English-Indonesian, Indonesian-English) and content validity was carried out by experts in maternity nursing.

Data Analysis

Univariate analysis using frequency distribution and percentage for categorical data. For numerical data mean, standard deviation, minimum and maximum were used.

RESULTS

Characteristic of Respondents

Four hundred sixty-two (462) women were recruited with a 100% response rate. The mean age of the respondents was 23.17 ± 5.065 . Half of the respondent level of education is college as many as 245 people (53%). Half of the respondents are employed as many as 239 people (51.7%).

Table 1.
Socio-demographic characteristics of Indonesian Women (n=462)

Variable	Category	Frequency	Percentage
Level of Education	Junior High School	19	4.1
	High School	198	42.9
	College	245	53.0
Employment	Unemployment	50	10.8
	Employment	239	51.7
	Student	173	37.4
Variable	Mean (SD)	Minimum	Maximum
Age (years)	23.17 ± 5.07	15	49

On the question related to acceptance of HPV vaccines, most of the respondents' answered hospitals as the place to get vaccination with 275 people (59.6%). The cost of vaccines that can be accepted by most respondents answered <400,000 Indonesian Rupiah as many as 283 people (61.3%). Most of the reasons for refusing to be vaccinated answered that the price of the vaccine was not affordable for as many as 210 people (45.5%). All the data is gathered in Table 2.

Table 2.
Reason for HPV Vaccination among Indonesian Women (n=462)

Variable	Category	Frequency	Percentage
Place to get vaccines	Hospital	275	59.6
	Clinical center	185	40.0
	Private clinic	2	0.4
Cost of vaccines	< 400.000	283	61.3
	400.000 – 1.200.000	122	26.4

	≤ 2.000.000	30	6.5
	> 2.000.000	27	5.8
Reasons for refusing to be vaccinated	Fear of injection	58	12.6
	Worried about side effects	120	26.0
	Cervical cancer is a rare disease and not worth getting vaccinated against	33	7.1
	Vaccine prices may not be affordable	210	45.5
	Do not have time to vaccinate	22	4.8
	Family rejection	5	1.1
	Do not believe in the effects of vaccinations	14	3.0

Knowledge of HPV Vaccination

The average knowledge is 16.02 with a standard deviation (SD) of 6.43, the knowledge value indicates less knowledge, where the SD value is getting bigger approaching the mean value of knowledge getting higher.

Table 3.
Frequency Distribution of HPV Vaccination Knowledge among Women (n=462)

Variable	Mean (SD)	Minimum	Maximum
<i>Knowledge</i>	16.02 ± 6.43	.00	28.00

In the item analysis, found that most respondents answer incorrectly to the question "HPV testing is done to show whether the HPV vaccine is needed?" with correct answers as many as 20 people (4.3%).

Table 3.
Analysis of the five most incorrect answers given to questions (by number of respondents)

Questions	Frequency	Percentage
HPV testing is done to show whether the HPV vaccine is needed?	20	4.3
The HPV test can tell how long you have had an HPV infection	34	7.4
HPV usually does not require any treatment	64	13.9
The HPV vaccine offers protection against all sexually transmitted infections	66	14.3
HPV can cause HIV/AIDS	75	16.2

Meanwhile, most of the respondents are shown did not know answered the question "HPV vaccine requires three doses" as many as 274 people (59.3%).

Table 4.
**Analysis of the five most “don’t know” answers given to questions
(by number of respondents)**

Questions	Frequency	Percentage
The HPV vaccine requires three doses	274	59.3
If you do an HPV test, you will get the results the same day	247	53.5
The HPV test can be done at the same time as the Pap Smear test	205	44.4
HPV can be cured with antibiotics	202	43.7
There are many types of HPV	197	42.6

DISCUSSION

The prevalence of respondents' knowledge of the HPV vaccine in this study was lower than in previous studies which is stated in Table 3. Previous research stated that 253 respondents (82.95%) had good knowledge of the HPV vaccine (8). This difference is likely because the respondents in the previous study had a higher level of education and received information about the HPV vaccine. Individuals with a higher level of education also have higher curiosity, because of the desire to obtain new information or knowledge (9). In this study, not all respondents had higher education, so there may be a lack of information about the HPV vaccine. This is by the theory of Sari and Mulasari (2017) that education is an effort to increase knowledge and change attitudes (10,11). However, this research is comparable to research conducted previously that women have less knowledge (66.6%) because they have never received information regarding the HPV vaccine (12).

The knowledge score about HPV and the HPV vaccine is still low as stated in Table 3. On the question "HPV testing is done to show whether the HPV vaccine is needed" most of the respondents thought that the HPV test was done to show that the HPV vaccine was needed, only nearly less than ten percent of respondents answered that the HPV test was not done to show that the HPV vaccine was needed. This research is

comparable to previous research which stated that 87.3% of respondents answered that HPV testing was carried out to show that the HPV vaccine was needed (13).

In the question "HPV test can tell how long you have had an HPV infection" most of the respondents thought that the HPV test could tell how long you had an HPV infection, only 7.4% of respondents answered correctly that the HPV test could not tell how long have had an HPV infection. This research is comparable to previous research which stated that 83% of respondents thought that the HPV test could tell how long they had had an HPV infection (13). However, it is interesting that in the question "HPV can cause HIV/AIDS", most of the respondents thought that HPV could cause HIV/AIDS, and only some respondents (16.2%) answered correctly that HPV could not cause HIV/AIDS. This research is different from previous research in that 87.2% of respondents knew that HPV could not cause HIV/AIDS (13). The reason for the difference in previous research is that the HPV vaccine is part of the country's national immunization program, so information about the HPV vaccine has been obtained. Unlike Indonesia, it has not been implemented in the national health program, so most respondents do not know about the HPV vaccine.

Regarding the questions about the HPV vaccine requiring three doses, some of the

respondents (59.3) answered that they did not know. The HPV vaccine requires three doses, but previous studies have stated that the effectiveness of a single dose of the HPV vaccine has a high protective effect, but this protection is lower than two or three doses of the HPV vaccine (14). This study is different from previous studies which showed that most respondents (88.2%) knew that the HPV vaccine required three doses (13). The reason for this difference is that previous studies have a fairly high level of knowledge, and the HPV vaccine has been administered through a national program in that country.

Strength and limitation

A large sample size can be taken as the strength of the study, meanwhile, the limitation would be due to the outspread of the questionnaire mostly on a similar area.

CONCLUSION

Women's knowledge of the HPV vaccine was nearly low in this study. The campaign and effort to spread the information related to HPV vaccination are needed. Innovative media might be the best option to spread awareness. Studies with a large sample and broad range of area are preferable.

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