Research Article

Effect Knowledge and Attitude with Behaviour of HPV Vaccination in Women of Reproductive Age

Pengaruh Pengetahuan dan Sikap dengan Perilaku Vaksinasi HPV pada Wanita Usia Reproduksi

Budi Darmawan, Bismarck J. Laihad, Frank M. M. Wagey

Department of Obstetrics and Gynecology
Faculty of Medicine Universitas Sam Ratulangi
Prof Dr. R. D. Kandou General Hospital
Manado

Abstract

Objection: To observe the association between knowledge and attitude towards HPV vaccination with the behavior towards HPV vaccination on reproductive woman in Indonesia.

Methods: We conducted observational analytic study with cross-sectional design. The study was conducted in obstetric and gynecologic outpatient clinic in Prof. Dr. R. D. Kandou General Hospital, Manado Indonesia through July and August 2021. Reproductively active woman were included as the subject. Univariate and bivariate analysis were conducted in this study.

Results: We included 364 reproductive woman. The majority of the subject were 20-35 year-old woman (50.8%) and were married (61.3%). The majority of the subject (72.8%) have received information about HPV vaccination. We found significant association between knowledge and attitude with the OR of 5.57 (p=0.00). Knowledge and attitude showed significant association with eagerness towards HPV vaccination. However, knowledge and behavior did not show any significant association towards HPV vaccination behavior.

Conclusion: There is a significant association between knowledge and attitude of HPV vaccination with eagerness toward HPV vaccination in reproductive women in Indonesia.

Keywords: behavior, HPV vaccination, knowledge, reproductive women.

Abstrak

Tujuan: *Untuk mengetahui hubungan pengetahuan dan sikap terhadap perilaku vaksinasi HPV pada perempuan usia reproduktif di RSUP Prof. DR. R. D. Kandou, Manado.*

Metode: *Penelitian ini merupakan penelitian analitik observasional dengan pengambilan subjek potong lintang. Penelitian dilakukan di unit pelayanan bagian Obstetri dan Ginekologi RSUP Prof. Dr. R. D. Kandou Manado pada Juli-Agustus 2021. Subjek penelitian merupakan perempuan usia reproduktif yang bersedia untuk mengikuti penelitian ini. Analisis data akan dilakukan secara univariat dan bivariat serta dilaporkan pada penelitian ini.*

Hasil: *Penelitian ini mencakup 364 perempuan dengan usia produktif. Mayoritas subjek merupakan perempuan dengan usia 20-35 tahun (50,8%) dan sudah menikah (61,3%). Mayoritas subjek (72,8%) pernah mendapatkan informasi vaksinasi HPV sebelumnya. Hubungan antara pengetahuan dan sikap terhadap vaksinasi menunjukkan hasil yang signifikan (p=0,00) dengan OR 5,57. Pengetahuan dan sikap juga menunjukkan hubungan yang signifikan dengan kesediaan vaksin (p<0,05). Pengetahuan dan sikap tidak menunjukkan hubungan yang bermakna terhadap perilaku vaksin (p>0,05).*

Kesimpulan: *Terdapat hubungan yang bermakna antara pengetahuan dan sikap dengan perilaku keinginan vaksinasi HPV pada perempuan usia reproduktif.*

Kata kunci: *pengetahuan, perempuan usia reproduktif, sikap, Vaksinasi HPV.*

Correspondence author. Budi Darmawan, Department of Obstetrics and Gynecology
Faculty of Medicine Universitas Sam Ratulangi. Prof.,Dr. R.D. Kandou General Hospital. Manado
email; budi_26690@outlook.com

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INTRODUCTION

Cervical cancer causes approximately 300,000 deaths in women annually. New cases of cervical cancer is recorded to be half a million cases annually. Cervical cancer is a major problem since 90% of women with cervical cancer live in the low-middle-income countries with limited screening and HPV vaccination programs. The treatment of cervical cancer depends on the diagnosis and staging; therefore, screening and diagnosis is crucial in reducing the mortality and morbidity rate of cervical cancer.

Cervical cancer is the fourth most common cancer in women and is still a huge problem in the medical world. The mortality rate in low-income and developing countries is 18 times higher than in the developed countries. Almost all of cervical cancer cases is caused by the *human papillomavirus* (HPV) with a high-risk cervical cancer subtype. In the developed countries, proper preventive measures with screening and HPV vaccination have effectively reduced the incidence rate; however, developing countries are still struggling to implement preventive methods evenly. This makes preventive methods of cervical cancer in patients important to be developed and studied.[1]

Human papillomavirus or HPV is a member of the *Papillomaviridae* family, which is a non-enveloped DNA viral family. HPV has approximately 216 subtypes, which are generally classified into low-risk, moderate-, and high-risk types. The low- and moderate-risk types have a low potential in causing malignant transformation, while the high-risk types, particularly type 16 and 18, have a high risk in causing malignancy. Both types are responsible for 70% of cervical cancer cases globally.[2-5]

WHO also stated that doubts about vaccine are one of the 10 biggest threat of health to the world, which higlights the importance of vaccine in preventing various morbidity and mortality, especially in cases of cervical cancer.[6,7]

Despite the efficacy of HPV vaccine, there are important problems regarding the application in the society. HPV vaccination is target population is still suboptimal. According to studies in several countries, especially developing countries, HPV vaccination behavior in preventing cervical cancer is still low. One of the study in West Kenya stated that only 9.4% of people received HPV vaccination.[8]

From these studies, it can be concluded that although the first or second generation of HPV vaccine is proven to be effective in preventing cervical cancer and has minimum side effects, there are still many obstacles in the behavior of the people. The knowledge and attitude factors are essential to be studied to conduct a wide and effective HPV vaccination, thus, reducing the incidence of cervical cancer. Therefore, we conducted a study regarding the association of knowledge and attitude with behaviour of HPV vaccination in women of reproductive age who presented to the Department of Obstetrics and Gynecology RSUP Prof. DR. R. D. Kandou, Manado.

METHODS

This study was an observational analytic with cross-sectional design, conducted in every Obstetrics and Gynecology services in RSUP Prof. Dr. R. D. Kandou Manado from July – August 2021. The sample in this study included women of reproductive age who visited the Department of Obstetrics and Gynecology of RSUP Prof. Dr. R. D. Kandou during the study period and met the inclusion criteria.

The inclusion criteria included women aged 15-49 years old who visited the Department of Obstetrics and Gynecology of RSUP Prof. Dr. R. D. Kandou, in a healthy condition and fully conscious, and are willing to participate in the study. The exclusion criteria included women who refused to participate in the study, were sick, had difficulty speaking or were not fully conscious, not part of the health workers at RSUP Prof. Dr. R. D. Kandou Manado, and patients with suspected COVID-19 based on symptoms and examination.

Data were obtained useing questionnaires. The knowledge and attitude variables were assessed based on the median result of the questionnaire. Vaccination behaviour variable was assessed by collecting data on whether the patient was vaccinated for HPV or not. Data were analyzed with chi-square and Fisher exact using the SPSS program. All subjects have signed the informed consent, and the study has been approved by the Ethics Committee of RSUP Prof. Dr. R. D. Kandou Manado.

RESULTS

A total of 364 women who presented to the Department of Obstetrics and Gynecology RSUP Prof. Dr. R. D. Kandou Manado were included

in the study. Most subjects (50.8%) were 20-35 years old.

Table 1. Characteristic of the Study Subjects

Characteristic	Cases	
	N (364)	%
Age		
<20	53	14.6
20-35	185	50.8
>35	126	35.6
Education Level		
Had never attended school	6	1.6
Elementary	18	4.9
Junior High	51	14
Senior High	199	54.7
Diploma/Undergraduate	89	24.5
Postgraduate	1	0.3
Occupation		
Student	91	25
Not working	134	36.8
Working	139	38.2
Marital Status		
Unmarried	135	37.1
Married	223	61.3
Widowed	6	1.6
Family Income (rupiah)		
< 2.000.000	204	56
2.000.000 – 5.000.000	119	32.7
> 5.000.000	41	11.3
Have Heard Informations about HPV Vaccination		
Yes	265	72.8
No	99	27.2
Have Heard Informations about Cervical Cancer Screening		
Yes	129	64.6
No	235	35.4

The median score for the knowledge variable was 76, while the score for attitude variable was 80. The analysis of association between knowledge and the willingness to vaccinate and vaccine behaviour showed a significant association between knowledge and willingness to vaccinate with a p value of <0.05 OR 5.75. The association between knowledge and vaccine behaviour showed non-statistically significant result, with a p-value of >0.05.

Table 2. The association between knowledge and willingness to vaccinate

Variable	Willingness to vaccinate		*P-value*	OR (CI 95%)
	Good	Poor		
Knowledge			0.000	5.75 (3.5-9.3)
- Good	178 (83.1)	36 (16.8)		
- Poor	67 (31.3)	78 (36.4)		
Total	245 (682)	114 (31.7)		

*Analysis with chi-square and expected count <5 less than 20%.

Table 3. The association between knowledge and vaccine behaviour

Variable	Vaccine behavior		*P-value*	OR (CI 95%)
	Good	Poor		
Knowledge			0.652	2.71 (0.3-24.4)
- Good	4 (1.8)	214 (100)		
- Poor	1(0.4)	145 (67.7)		
Total	5 (1.3)	359 (100)		

*Analysis with Fisher exact and expected count <5 less than 20%.

The association between attitude and willingness to vaccinate was shown to have a significant association with a p-value of <0.05 and OR 17.6, indicating that good attitude increases the likelihood of willingness to vaccinate of 17 times higher than subjects with poor attitude.

Table 4. The association between attitude and willingness to vaccinate

Variable	Willingness to vaccinate		*P-value*	OR (CI 95%)
	Good	Poor		
Knowledge			0.000	17.6 (9.3-33.3)
- Good	170 (79.4)	13 (6)		
- Poor	75 (35)	101 (47.1)		
Total	245 (68.2)	114 (31.7)		

* Analysis with chi-square and expected count <5 less than 20%.

Table 5. The association between attitude and vaccine behaviour

Variable	Vaccine behaviour		*P-value*	OR (CI 95%)
	Good	Poor		
Knowledge			0.061	2.32
- Good	5 (2.3)	183 (85.5)		
- Poor	0 (0)	176 (82.2)		
Total	5 (1.3)	359 (100)		

* Analysis with Fisher exact and expected count <5 less than 20%.

DISCUSSION

In this study, 364 women in reproductive age who presented to the Department of Obstetrics and Gynecology of RSUP Prof Dr R D Kandou Manado were included. Most subjects were women aged 20-35 years (50.8%), followed by women aged >35 years (35.6%). The age distribution in this study is considered appropriate considering the high incidence of cervical cancer in women aged 30-49 years. The consideration of age was also adjusted with the timing of HPV vaccination, which is recommended for adult women. The guideline by CDC stated that HPV vaccine can be administered in adult women aged 27-45 years with a clinician's consideration if the patient has not received adequate HPV

vaccination during their youth.[9] This result showed that most subjects in this study were candidates for HPV vaccination in adult and might reflect the population. In the educational level, most subjects had an educational level of high school or undergraduate/diploma, accounting for over 80%. The educational level might affect knowledge and attitude toward HPV vaccination, which is the outcome of this study. Previous studies have shown an association of lower education with awareness of HPV infection.[10] Previous studies regarding knowledge level in HPV vaccination also showed similar educational level of the subjects as in this study.[11] In this study, the educational level of most subjects were considered quite high with high school or diploma/undergraduate. This is expected to provide a fairly good knowledge level regarding HPV infections or vaccinations.

This study showed a 5.7 times increase in willingness to vaccinate in subjects with good knowledge level compared to poor level. The association between knowledge and HPV vaccination behaviour was not statistically significant. However, the result showed a 2.7 times increase in HPV vaccine behaviour in subjects with good knowledge level compared to poor knowledge level. The non-significant result in this study might be due to the small study sample in the group who had received vaccination in this study. Only five subjects (1.37%) in this study who have received HPV vaccination. Previous studies showed similar result with very low vaccination rate in the population, particularly in developing countries.[11] This finding might be due to the low knowledge level of the population in those countries regarding cervical cancer and HPV vaccination. Other studies have shown that the low HPV vaccination rate might be due to confusing age recommendation and unclear vaccination schedule, leading to patients' reluctance in counseling and receiving HPV vaccination.[12,13] This finding showed the importance of knowledge and education from the health workers in promoting HPV vaccination to the society.

The association between attitude and willingness to vaccinate showed a statistically significant result. The OR in this study showed a 17 times increase of willingness to vaccinate in subjects with good attitude compared to subjects with poor attitude. In contrast, the association between attitude and HPV vaccine behaviour was not statistically significant ($p>0.05$). However, the OR showed increased vaccine behaviour in subjects with good attitude. The non-significant result might be due to the low number of study sample. There was no subject who have received vaccination and have a poor attitude, which caused a higher risk of bias in the analysis. Previous studies showed that positive attitude towards HPV vaccination might affect the willingness to vaccinate in women.[14]

The analysis result of this study showed an imbalance between the willingness to vaccinate and vaccination behaviour of the study subjects. The imbalance between willingness to vaccinate and behaviour might be due to the limited access for adult population to obtain HPV vaccines. Furthermore, the vaccination criteria for women of a certain age might also be the cause of such low vaccination rate in this study population. Currently, HPV vaccination program has been ongoing for children in the fifth and sixth grade of elementary school for free. However, HPV vaccination is young adult and adult populations is still scarce. Therefore, more efforts to increase education and information regarding HPV vaccination in the adult population are needed in Indonesia to increase the knowledge and willingness of women of reproductive age in receiving HPV vaccines as an effort to prevent cervical cancer.

CONCLUSION

Based on this study, it can be concluded that there is no significant association between knowledge and attitude of women of reproductive age with HPV vaccination behaviour, there is a significant association between knowledge and attitude of women of reproductive age with willingness to vaccinate.

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