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PRIMARY RESEARCH

Intention to Get HPV vaccine to prevent cervical cancer in young women based on knowledge profile and health belief model theory

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Abstract

Human Papilloma Virus (HPV) is a sexually transmitted virus and passed on through genital contact or sexual activity. It is the main cause of cervical cancer. WHO estimated 570.000 new cases of cervical cancer in 2018, and approximately 90% of mortality occurred in low- and middle-income countries. This research aims to find out young women's intention to get HPV vaccination, the primary prevention of cervical cancer. Non-random sampling is used as a sampling method, and a total of 108 respondents from Indonesia participated in this research. The results show the intention to get the HPV vaccine is low, 39.8% (n = 43). Approximately 40.7% (n = 44) respondents have high knowledge, but there is no correlation between knowledge level and intention to do HPV vaccination. In Health Belief Model (HBM) construct, 100% (n = 108) respondents have a high perception in perceiving severity, and 96.3% (n = 104) respondents have a high perception in perceiving benefit. Meanwhile, 61.1% (n = 66) of respondents show a low perception of perceived barriers, which means most respondents have barriers to getting the HPV vaccine. Therefore, an effort to spread information about cervical cancer and HPV vaccine is needed to increase the intention of young women to do HPV vaccination.

I. INTRODUCTION

Cervical cancer is an infectious disease that causes excessive and uncontrolled cell growth around the cervix area [1, 2]. The main cause of cervical cancer is HPV , and other risk factors such as smoking, immune disorders, free sex at a young age, sexually transmitted diseases, and use of contraceptive pills [3, 4]. Human papilloma viruses contribute to 20% of cancer deaths in low and middle income countries. Cervical cancer is the second largest type of cancer in women worldwide after breast cancer. In 2013, incidence of cervical cancer is estimated to be around 528,000 and 266,000 deaths. About 87% of cases occur in developing countries [5].

Indonesia is the second country in the world which has the most people with cervical cancer with an incidence reaching 15,000 cases every year and 50% of mortality [6, 7]. This makes cervical cancer is the number one killer of female in Indonesia. Women over the age of 15 years are said to have a higher risk of cervical can cer and women with the age group 40-46 are the group most suffering from cervical cancer [8]. In addition, the incidence of cervical cancer also greatly affects the live of patients and their families and will also greatly affect the health financing sector by the government. Therefore an increase in efforts to treat cervical cancer, especially in the field of prevention and early detection is very necessary because cervical cancer can cause infertility, morbidity and mortality for women.

HPV vaccination is a specific form of protection against cervical cancer given when it has not been infected where the success rate can reach 100% if given twice in the productive age group of women who have never been infected with HPV. The recommended age for HPV vaccination for effec-

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tive results is in women aged 10–26 years, but the results of the study show that the vaccine still provides benefits when given to women up to age 55 [9]. According to the Indonesian Pediatrician Association (IDAI) and the Indonesian Internal Medicine Association (PAPDI), vaccination can be given to children and adolescents from the age of 10 to 18 while for adults the HPV vaccination can be given for ages 19–55. The Health Belief Model theory is one of the first models designed to encourage people to take action towards positive health [10]. In its development, the 4 main constructs in HBM theory are perceived susceptibility, perceived severity, perceived benefit and perceived barriers. Based on this description, this study aims to analyze the profile of knowledge and beliefs about HPV vaccination in an effort to prevent cervical cancer early in women. Based on several studies showing the use of HBM theory as a parameter in analyzing a relationship between dependent and independent variables can produce clear and concise data because the difference can be seen significantly. The Health Belief Model theory is based on the belief that individual behavior is determined by perceptions of vulnerability of cervical cancer, perceptions of the seriousness of cervical cancer, perceptions of the benefits of HPV vaccination and perceived barriers from HPV vaccination. The perceived perceptions of these individuals are influenced by modifying factors that can indirectly influence health behavior [10]. The purpose of this study was to determine vaccination status, intention to vaccinate, and analyze the demographic profile, knowledge and beliefs of HPV vaccination on young women in Indonesia using the theory of Health Belief Model.

II. METHODS

This study using cross-sectional method and descriptive analytical study assessed correlation between knowledge profile and intention to get HPV vaccine, and also correlation between Health Belief Model theory and intention to get HPV vaccine among young women. Sampling method used in this study was Non-Random sampling and samples were collected within 7 days.

The inclusion criteria of the study were: young woman, age 18–26 years, Indonesian citizen, never been married, and never been get HPV vaccine before. Instrument used in this study was questionnaire that comprises 1 question about intention to get HPV vaccine, 8 questions about knowledge and 12 questions about Health Belief Model which contains severity, susceptibility, barriers, benefits.

The results obtained will be analyzed using SPSS program version 16.0, resulting in a correlation between knowledge profile and intention to get HPV vaccine, and also correlation betwen Health Belief Model theory and intention to get HPV vaccine among young women.

III. RESULTS AND DISCUSSION

The result show that over 108 respondent, the demography shown in Table 1. Mean of age is 20 dan all of respondent have not get HPV vaccinnaction yet. Over all of the respondent, 39,8% have intention toget HPV vaccination while 60.2% have not intention togetHPV vaccination yet. Knowledge profile of respondents about HPV vaccination shown in Table 2, there are 8 questionary that given to respondents about general information of cervical cancer and HPV vaccination. The result show that knowledge profile of respondent are good enough with right answer is 5 of 8 questions. From 8 questions, 91.7% of respondent have known that HPV can caused cervical cancer, mouth, and anal. But, knowledge profile about pap smear is still low (13%). The answer of all respondents, knowledge profile can be grouped in 3 levels that shown in Table 3.

The HBM theory consists of several constructs, such as perceived severity, perceived susceptibility, perceived barrier, and perceived benefit. The results of the study found that the HBM profile that can be seen in Table 4 and the results of the HBM profile are grouped based on several levels which can be seen in Table 5.

TABLE 1
DEMOGRAPHY OF RESPONDENTS

Demography		***N* (%)**
Age	18-20	35 (32.4%)
	21-23	71 (65.7%)
	24-26	2 (1.9%)
Vaccination status	Have	0 (0)
	Have not	108 (100)
Intention to get HPV Vaccine	Yes	43 (39.8)
	No	65 (60.2)

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TABLE 2
KNOWLEDGE PROFILE

Statements	*N* (%)	
	Right Answer	Wrong Answer
HPV infection can be treated by antifungi [11]	74 (68.5)	34 (31.5)
HPV can cause cervical cancer, mouth cancer, dan anus cancer [12]	99 (91.7)	9 (8.3)
HPV infection has obvious symptomps [13]	60 (55.6)	48 (44.4)
Blood test can identify cervical cancer [13]	39 (36.1)	69 (63.9)
Male can get infected by HPV [11]	73 (67.6)	35 (32.4)
Pap Smear is an examination to determine abnormal area and their abnormalities by using tools [14]	14 (13)	94 (87)
Sex in early age (< 16 years) is a risk factor of cervical cancer [14]	96 (88.9)	12 (11.1)
Complete HPV vaccination consists of 3 injections periodically [15]	96 (88.9)	12 (11.1)

TABLE 3
KNOWLEDGE LEVEL PROFIL

Knowledge Level	Score	*n* (%)
Low	0-2	0 (0%)
Moderate	3-5	64 (59.3%)
High	6-8	44 (40.7%)

TABLE 4
BELIEF PROFILE OF HPV VACCINE BASED ON HBM THEORY

Items	Absolutely Disagree	Disagree	Agree	Absolutely Agree
Severity				
I believe that HPV is harmful	0(0%)	1(0.9%)	26(24.1%)	81(75%)
I believe that HPV infection can be serious	0(0%)	1(0.9%)	20(18.5%)	87(80.6%)
I believe HPV infection can decrease quality of life	1(0.9%)	6(5.6%)	32(29.6%)	69(63.9%)
Susceptibility				
I may one day be at risk of getting HPV	24(22.2%)	37(34.3%)	31(28.7%)	16(14.8%)
I have risk of getting servical cancer if i don't get HPV vaccination	3(2.8%)	37(34.3%)	47(43.5%)	21(19.4%)
I still have risk of getting servical cancer eventhough i keep higiene	4(3.7%)	19(17.6%)	61(56.5%)	24(22.2%)
Barriers				
I am afraid of needle	36(33.3%)	23(21.3%)	21(19.4%)	28(25.9%)
Vaccination's cost become obstacle for me to get vaccination	6(5.6%)	21(19.4%)	32(29.6%)	49(45.4%)
I do not get HPV vaccination due to lack of information	6(5.6%)	12(11.1%)	38(35.2%)	52(48.1%)
Benefits				
I can prevent cervical cancer if i get HPV vaccination	0(0%)	9(8.3%)	49(45.4%)	50(46.3%)
I feel secure if I get HPV vaccination	0(0%)	18(16.7%)	46(42.6%)	44(40.7%)
HPV vaccination can decrease risk of carvical cancer	0(0%)	14(13%)	50(46.3%)	44(40.7%)

TABLE 5
HBM LEVEL PROFILE

HBM Level	Score	P. Severity	P. Susceptibility	P. Barriers	P. Benefits
Low	(1-4)	0 (0%)	24 (22.2%)	66 (61.1%)	4 (3.7%)
Moderate	(5-8)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
High	(9-12)	108 (100%)	84 (77.8%)	42 (38.9%)	104 (96.3%)

Perceived severity [16] is a belief about the impact of severity obtained when exposed to the disease or let it not be treated. Constructs of perceived severity show that 99.1% of respondents felt that HPV is a dangerous and serious infection and HPV infection can reduce quality of life (93.5%). Perceived susceptibility [16] is a perception of vulnerability refers to a person's beliefs about the possibility of experiencing risks or the possibility of getting a disease. Susceptibility profile shows that respondents feel they are at risk of being infected with HPV (43.5%), have a risk of cervical cancer if they do not get the HPV vaccine (62.9%), and 78.7% of respondents have confidence in cervical cancer despite

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maintaining cleanliness . The Perceived Barrier [16] is an individual's belief in evaluating obstacles faced by adopting a behavior. Someone will consider the benefits and consequences of behavior change, the alleged effectiveness of the action and the perception that the action is expensive, dangerous (negative side effects), unpleasant (sick, difficult or disturbing), uncomfortable, time consuming and so on. From the data analysis conducted, it was found that respondents did not vaccinate HPV due to several obstacles, such as 45.3% due to fear of being injected, 75% because the HPV vaccine prices were quite expensive and lack of information regarding the HPV vaccine (83.3%).

Perceived Benefit [16] is an individual belief that if he changes his behavior in a better direction, it can reduce the risk of getting an illness. Someone will adopt a new behavior if the behavior can avoid the risk of getting the disease. The profile of perceived benefits showed that respondents felt they could prevent cervical cancer by HPV vaccination (91.7%), felt safe when they had vaccinated against HPV (83.3%), and 87% of respondents believed that HPV vaccination could reduce the risk of cervical cancer.

In this study conducted an analysis to determine the correlation between intention toget HPV vaccination with the level of knowledge and the intention toget HPV vaccination with HBM theory, the results of the analysis can be seen in Table 6, said there is a correlation if it has a significant figure <0.05. From these results it is known that the level of knowledge, perceived severity, perceived susceptibility, and perceived benefits do not correlate with the respondent'sintention toget HPV vaccination. It is mean that a high level of knowledge, feels that cervical cancer is dangerous, feels that there is a risk of being infected with HPV and feels that beneficial HPV vaccination does not guarantee the respondent'sintention toget HPV vaccination. This may be due to the existence of obstacles to HPV vaccination, which is indicated by the correlation between intention toget HPV vaccination with perceived barriers.

TABLE 6
CORRELATIONS

	Knowledge Level	P. Severity	P. Susceptibility	P. Barriers	P. Benefits
Intention to get HPV vaccine	0.588	0.164	0.064	0.048	0.075

IV. CONCLUSION

The conclusion of this study is the respondent's knowledge about cervical cancer and HPV vaccination, the factors of perceived severity, perceived susceptibility and perceived benefits did not significantly influence the intention to get HPV vaccination. The intention toget HPV vaccination is still low due to the presence of barrier factors so that an effort is needed to disseminate information about cervical cancer and HPV vaccination either directly through print or electronic media. Thus it is expected that the intention toget HPV vaccination will also increase.

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