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Article

The relationship between WUS knowledge about cervical cancer and behavior in carrying out HPV vaccination

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A B S T R A C T

Human Papillomavirus (HPV) infection often has no symptoms and may go undetected. Cervical cancer is commonly found in women of reproductive age, usually between 15 and 45 years. Several factors can increase the risk of cervical cancer, including early sexual activity (before age 20), multiple sexual partners, early pregnancy, smoking, a history of sexually transmitted infections (STIs), high parity, use of hormonal contraceptives, consumption of immunosuppressive drugs, and unhealthy lifestyles and eating habits. This study aims to determine the relationship between knowledge about cervical cancer and behaviour towards HPV vaccination among women of childbearing age. The study design used was a cross-sectional study, with data analysed using the chi-square test. The sample consisted of 55 women aged 15–49 years who visited or sought treatment at the Clinic. This study found a statistically significant relationship between knowledge about cervical cancer and behaviour towards HPV vaccination among women of childbearing age (p-value = 0.009). Conclusion: Knowledge about cervical cancer is significantly associated with behaviour towards HPV vaccination. The suggestion is that increasing awareness and education regarding cervical cancer and HPV vaccination can contribute to increased preventive behaviour among women of reproductive age.

I. INTRODUCTION

HPV infection has been identified as the primary cause of cervical cancer. Data shows that HPV is responsible for nearly all cervical cancer cases, accounting for over 95% (Dewi et al., 2021). According to data from the Global Cancer Observatory (2022a), cervical cancer is the second most common cancer with 195,898 cases and the third most common cause of death with 118,975 deaths in Southeast Asia (Global Cancer Observatory, 2022). Cervical cancer is the fourth most common cancer in women worldwide. The majority of cervical cancers (over 99%) are caused by the Human Papilloma Virus (HPV) (WHO, 2022). According to data from the Global Cancer Observatory (2022), the prevalence of cervical cancer in Indonesia ranks second after breast cancer, with 36,964 cases, or 16.8% of the 220,266 cases of cancer in women. Cervical cancer cases resulted in a death toll of 20,708 (Global Cancer Observatory, 2022). Data from the Riau Islands Health Office in 2021 showed that cervical cancer was among the 42 cases treated. Another 2021 study estimated the prevalence of cervical cancer in the Riau Islands at 1.5% based on doctor diagnoses, with an estimated number of sufferers of approximately 1,416 (Riau Islands Health Office, 2021).

HPV infections tend to be asymptomatic or unrecognized. HPV infections in individuals with high sexual activity are generally asymptomatic and often go undetected (Wierzbicka, 2023). Cervical cancer often occurs in women of reproductive age, between the ages of 15 and 45 (Ferlay et al., 2020). This age group is considered productive and sexually active (Fentia, 2020). Women with high sexual activity are at higher risk of developing cervical cancer (Wahyuni & Anes, 2024). Factors that can increase the risk of cervical cancer include sexual activity before the age of 20, multiple partners, a history of early pregnancy, female smoking, a history of sexually transmitted infections, parity, use of hormonal contraceptives, use of immunosuppressive drugs, and unhealthy behavioral and dietary habits (Wahyuni & Anes, 2024).

In women of childbearing age, cervical cancer can cause infertility, morbidity, and mortality. Therefore, to suppress the occurrence of cervical cancer and prevent its increase, preventive measures are necessary (Susanti, 2024). Cervical cancer prevention efforts include screening for early detection and HPV vaccination. Early detection of cervical cancer can be performed with a VIA test or a Pap smear (Wasita et al., 2021). Screening is performed on sexually active women. However, screening programs have not been effective in reducing the incidence of cervical cancer. This is because screening programs are secondary prevention programs and can only detect the disease early and cannot prevent HPV infection.

Based on Decree of the Minister of Health of the Republic of Indonesia Number 34 of 2019, the most effective primary prevention measure to prevent the risk of cervical cancer is HPV vaccination. Cervical cancer prevention through vaccination is a primary prevention measure expected to reduce the incidence of high-risk HPV infection and the development of cervical cancer, thereby reducing the incidence of cervical cancer (Putri, 2023). Women who have not yet had sexual intercourse can be vaccinated immediately, but sexually active women are required to undergo screening first. Women of childbearing age are advised to undergo cervical cancer screening before HPV vaccination because screening can detect precancerous lesions that may already be present. Vaccination is more effective if administered before exposure to HPV, and screening helps determine the health status of the cervix. Early detection through Pap smears and HPV vaccination can reduce the risk of developing cervical cancer, so the combination of screening and vaccination provides greater protection (Sudarwini, 2023).

The HPV vaccine for women of childbearing age (over 21 years) can be given in two doses, six months apart. The Human Papillomavirus (HPV) vaccine has been shown to be effective in preventing cervical cancer and several other types of HPV-related cancers. This vaccine is most effective when administered before an individual is exposed to the virus, that is, before the onset of sexual activity. Therefore, HPV vaccination is highly recommended for adolescents and adult women who have not yet shown symptoms of cervical cancer. The World Health Organization (WHO) recommends HPV vaccination for girls starting at age 9. For children and adolescents aged 9-14, the WHO recommends one or two doses with an interval of 6-12 months. Meanwhile, for adolescents and women aged 15 and above, the vaccination is given in two doses with the same interval (WHO, 2022).

Preventing disease requires appropriate health measures. However, barriers often hinder individuals from taking these measures. Nola J. Pender's health promotion model theory highlights the concept of Perceived Barriers to Action. This concept refers to an individual's perception of the difficulties they face in taking health measures. This perception can be a major barrier to improving health behaviors (Purwahyuni, 2020). Factors influencing health behavior can be divided into two main categories: internal and external. Bandura (2020) explains that internal factors such as knowledge, attitudes, and motivation are important determinants of health behavior. On the other hand, external factors such as access to health facilities, the cost of health services, and the availability of information also play a significant role (Yulda, 2021), so it is

necessary to conduct research on the relationship between WUS knowledge about cervical cancer and behavior in carrying out HPV vaccination.

II. METHODS

Data collection was conducted using a questionnaire regarding women of childbearing age's knowledge about cervical cancer and their behavior regarding HPV vaccination. Knowledge was measured by dividing the average measurement score into good (>50%) and poor (<50%). Bivariate analysis was used to assess the relationship between the two variables studied. The chi-square test was used with a 95% confidence interval.

III. RESULT

Table 1 Distribution of Respondent Characteristics

Characteristics	Total	%
Age		
< 20 tahun	4	7,3
20-35 tahun	44	80,0
>35 tahun	7	12.7
Education		
High School	20	36,4
D3/S1	35	63,6
Marital status		
Single	7	12,7
Married	45	81,8
Widowed	3	5,5
Cervical Cancer Information		
Yes	45	81,8
No	10	18,2
HPV Vaccine Information		
Yes	37	67,3
No	18	32,7

Based on Table 1, the majority of respondents were aged 20-35 years (80.0%). Thirty-five (63.6%) respondents had graduated from college. 81.8% (45%) of respondents were married. 81.8% of respondents who answered had heard or were aware of information about cervical cancer, 67.3% of respondents were aware of information about the HPV vaccine.

Knowledge levels were measured by distributing questionnaires to respondents. Knowledge in this study was measured by respondents' ability to answer the questionnaire about the ins and outs of cervical cancer, including understanding cervical cancer and HPV vaccination. Data were measured based on the total score. The results are described as follows:

Table 2. Frequency Distribution of Respondents Based on Knowledge About Cervical Cancer

Frequency	Total	%
Good	24	43,6
Poor	31	56,4
Total	55	100

The results of the study showed that the majority of respondents had a low level of knowledge regarding cervical cancer and HPV vaccination, namely 31 people (56.4%), while respondents with good knowledge numbered 24 people (43.6%).

Table 3. Distribution of Respondents of Women of Childbearing Age Based on HPV Vaccination Behavior

Frequency	Total	%
Yes	10	18,2
No	45	81,8
Total	55	100

The results showed that respondents' attitudes toward HPV vaccination tended to be lower among those who had been vaccinated, with 10 (18,2%) and 27 (81,8%) having not or not having received the HPV vaccination.

Bivariate analysis was conducted on the variable level of knowledge about cervical cancer with the behavior of HPV vaccination to prevent cervical cancer in women of childbearing age which was suspected to be related or correlated using the Chi-Square test at a 95% confidence level (alpha -0.05). The assessment results are described as follows:

Table 4. Relationship between Women of Childbearing Age (WUS) Knowledge about Cervical Cancer and Their Behavior in HPV

Knowledge	Behavior Vaccination				Total		p-value
	Yes		No				
	F	%	F	%	F	%	
Good	9	16,4	15	27,3	24	43.6	
Poor	1	1,8	30	54,5	31	56.4	0.009
Total	10	18,2	45	81,8	55	100	

Respondents with good knowledge tend to have the behavior of taking action on HPV vaccination, which is 9 people (16.4%), while respondents with good knowledge who have the behavior of not taking HPV vaccination are 15 people (27.3%). On the other hand, in respondents with less knowledge, the behavior of taking HPV vaccination is only owned by 1 person (1.8%), while respondents with less knowledge who have the behavior of not taking HPV vaccination were found in 30 people (54.5%), and a p-value of 0.009 was found to be smaller than <0.05.

IV. DISCUSSION

Research results indicate that public knowledge regarding cervical cancer and its prevention through HPV vaccination remains uneven. Researchers assume this low level of knowledge may be influenced by limited access to accurate health information, a lack of community outreach or outreach activities, and the persistence of misconceptions or myths surrounding cervical cancer and HPV vaccination.

Knowledge is influenced by education, occupation, age, environment, and sociocultural factors. Education is necessary to obtain information about health-promoting factors that can improve quality of life. Through work, a person gains experience and knowledge, both directly and indirectly. Age also influences a person's comprehension and thinking skills as they age.

The results of this study align with research on the Relationship between Knowledge Level and Parental Support and HPV Vaccination Participation among Elementary School Students in

Manado, which showed that 56 respondents (51.9%) had poor knowledge and 52 respondents (48.1%) had good knowledge (Ansiga, 2024).

The results of this study align with research on the Relationship between Knowledge Level and Parental Support and HPV Vaccination Participation among Elementary School Students in Manado, which showed that 56 respondents (51.9%) had poor knowledge and 52 respondents (48.1%) had good knowledge. Similarly, research on the Relationship between Knowledge, Perception, and Attitude and Interest in Human Papillomavirus (HPV) Vaccination in Women of Childbearing Age in Gudang Village, Cikalongkulon District, Cianjur Regency, showed that the majority of women of childbearing age (55%) had poor knowledge (Fitri, 2021).

This demonstrates that public knowledge about cervical cancer is not evenly distributed. This can be caused by various things, especially the level of education and exposure to education or counseling.

The factors that influence human behavior consist of internal factors (genetics, personality, motivation, emotions, attitudes) and external factors (social environment, culture, education, religion). Behavior is formed from complex interactions between personal characteristics, situations, and the environment, which influence a person's decisions, habits, and responses to stimulation. (Sunaryo, 2021)

This research aligns with research on the Relationship between Knowledge, Perception, and Attitude and Interest in Human Papillomavirus (HPV) Vaccination among Women of Childbearing Age in Gudang Village, Cikalongkulon District, Cianjur Regency, which showed that the majority of women of childbearing age (51 women) had negative attitudes (53.7%) (Fitri, 2021). This study differs from research on the Analysis of Knowledge Levels and Attitudes of Women Regarding HPV Vaccination as Cervical Cancer Prevention in Tigaraksa Village, Tigaraksa Community Health Center Work Area, Tangerang, which found that 73.9% of respondents were not interested in HPV vaccination and 26.1% were interested in HPV vaccination (Setiawati, 2023).

The results of this study indicate that women's attitudes toward HPV vaccination are quite positive. This attitude is influenced by internal factors such as specific encouragement, social support, and prevailing norms. The researchers assume that these differences in attitudes may be influenced by

the level of knowledge, personal or close experiences with vaccination, social influences, and exposure to both accurate and misleading information. This situation demonstrates the need for increased public education and clarification of misinformation to foster a more positive attitude toward HPV vaccination.

Increased knowledge of women of reproductive age about cervical cancer will also improve their attitudes and behavior regarding HPV vaccination. These results indicate that the better women's knowledge about cervical cancer and the benefits of HPV vaccination, the greater their likelihood of behavioral change regarding vaccination. Conversely, lack of knowledge can be a barrier to developing positive attitudes and will influence HPV vaccination behavior. Therefore, more intensive and targeted educational efforts are needed to increase awareness and support for HPV vaccination. Therefore, it is concluded that there is a relationship between knowledge of women of reproductive age about cervical cancer and their behavior regarding HPV vaccination to prevent cervical cancer.

Programs such as cervical cancer screening are thought to accelerate the decline in the number of cases in many countries. Research indicates changes in sexual behavior and an increase in HPV transmission that are not adequately compensated for by cytology screening such as Pap smears. Cervical cancer cases have also decreased in countries in the Caribbean and Central and South America due to the introduction of cervical cancer screening, although incidence rates remain high (Sung, 2021; Pilleron, 2020).

These results align with research conducted in the Batoh Community Health Center (Puskesmas) working area in Banda Aceh City. Based on data analysis of research conducted on early detection of cervical cancer in fertile couples through the VIA test, a significant relationship was found between knowledge and early detection of cervical cancer in fertile couples using the VIA test (Nur SA, Agustina, Riza S, 2022). Furthermore, research at the Matraman District Community Health Center in East Jakarta found that mothers with good knowledge were 22 times more likely to undergo early detection of cervical cancer compared to mothers with less knowledge (Pertiwi D.I., et al., 2023).

Based on the research results, researchers assume that the level of knowledge about cervical cancer is a significant factor influencing the attitudes and behavior changes of women of childbearing age towards prevention efforts, particularly through HPV vaccination. The higher the knowledge, the

greater the desire to undergo vaccination and early detection of cervical cancer. This assumption is supported by various previous studies showing a significant relationship between knowledge and preventive behavior. Increasing knowledge through educational programs and public health interventions is believed to strengthen positive attitudes among women of reproductive age towards HPV vaccination, thereby reducing the incidence of cervical cancer.

V. CONCLUSION

There is a significant relationship (0.009 < 0.05) between the level of knowledge of women of childbearing age (WUS) about cervical cancer and their behavior in receiving HPV vaccination. Those in the good knowledge category tend to have the correct behavior for receiving HPV vaccination (16.4%), while those in the poor knowledge category tend to have the behavior of not wanting to receive HPV vaccination (54.5%).

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