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CORRELATION OF ADOLESCENT KNOWLEDGE ABOUT FREE SEX PRACTICES WITH THE RISK OF CERVICAL CANCER ON THE MOTIVATION OF HPV VACCINATION AT JUNIOR HIGH SCHOOL 6 SURABAYA

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Abstract

Background: Cervical cancer had the second position as the leading cause of cancer towards woman in worldwide. The prevalence of cervical cancer in Indonesia reaches 23,4 cases from 100.000 population (Kemenkes RI, 2019). To enhance awareness and knowledge about HPV vaccination and cervical cancer, it is imperative to disseminate information through early health promotion regarding cervical cancer prevention, including HPV vaccination, and avoiding behaviors that may elevate the risk of cervical cancer, such as engaging in unprotected sexual activities. The aim of this study is to determine the correlation between adolescents' knowledge of "Free Sexual Practices with Cervical Cancer Incidence Risk" towards motivation for HPV vaccination at 6 Junior High School Surabaya. **Method**: The quantitative cross-sectional approach involved 304 students from grades 7, 8, and 9, selected through stratified sampling and was analyzed using the Spearman analysis test. **Results**: The majority (83.1%) of adolescents in grades 7, 8, and 9 demonstrated good knowledge (83.1%) regarding free sexual practices with the risk of cervical cancer incidence. A considerable number of adolescents (29.9%) in grades 7, 8, and 9 showed a moderate level of motivation. There is a significant correlation between the knowledge level regarding cervical cancer and the risk of cervical cancer incidence concerning motivation for HPV vaccination, with a p-value of 0.000 ($p < 0.05$). **Conclusion**: There is a correlation between the knowledge level regarding cervical cancer and the risk of cervical cancer incidence concerning motivation for HPV vaccination at 6 Junior High School Surabaya.

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keyword : cervical cancer, adolescent, free sexual practices, HPV vaccination

INTRODUCTION

Cervical cancer ranks fourth globally among women, with a mortality rate of approximately 90% in developing countries, primarily due to a lack of public awareness regarding its etiology and consequential impact (Salim, 2020). Despite its severity, public knowledge pertaining to the causes and consequences of cervical cancer remains insufficient, particularly in underdeveloped nations. Global data

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reveals that annually, 500,000 women are diagnosed with cervical cancer, with 300,000 succumbing to the disease, positioning it as the second-leading cause of death among women worldwide (WHO, 2021). In Indonesia, cervical cancer presents a significant threat, ranking second in prevalence among women after breast cancer (Ministry of Health, Indonesia, 2021). Despite the high incidence of cervical cancer, early detection and screening coverage in certain regions, such as the Gubeng sub-district in Surabaya, remain low (Surabaya Health Profile, 2019). The elevated morbidity and mortality associated with cervical cancer are attributed to the slow progression of the disease and a lack of community motivation for early screening and self-examination (Khoirunisa et al., 2023).

Adolescents, as a vulnerable group, often lack comprehensive and consistent attention, particularly concerning reproductive health. Data indicate that adolescent sexual behavior is frequently influenced by their level of sexual knowledge (Lestari, 2020). Furthermore, insufficient knowledge about sex can be a risk factor for risky sexual behavior, which is one of the risk factors for cervical cancer (Purbosari et al., 2021). Studies show that an early age of initiation of sexual activity can increase the risk of cervical cancer (Louie et al., 2019).

In light of this situation, prevention efforts through HPV vaccination become paramount. The World Health Organization (WHO) recommends HPV vaccination as primary prevention for cervical cancer (Suryoadji et al., 2022). However, HPV vaccination coverage in Indonesia remains low, with only approximately 1.1% of the adult population having received two doses of the vaccine (Finocchario-Kessler et al., 2016). To enhance awareness and knowledge of HPV vaccination and cervical cancer, health promotion and health education are imperative (Dewi et al., 2021).

This study aims to explore the relationship between adolescents' knowledge of "Risky Sexual Practices and the Risk of Cervical Cancer Incidence" and their motivation to undergo HPV vaccination at SMPN 6 Surabaya. By highlighting the knowledge gap among adolescents regarding cervical cancer, this research aspires to make a significant contribution to cervical cancer prevention efforts in Indonesia, particularly among adolescents.

METHOD

This research constitutes an observational analytical quantitative study employing a cross-sectional approach, conducted from August to November 2023 at Junior High School 6 Surabaya. The study population comprised 1246 students, encompassing both females and males. The sample for this research consisted of 304 students who met the inclusion criteria. Inclusion criteria encompassed all willing respondents from grades 7,8, and 9 of SMPN 6 Surabaya, while exclusion criteria were applied if incomplete responses were identified in the questionnaire. The sampling technique employed was stratified sampling. The instrument utilized for data collection was a questionnaire. The validity test compared the calculated *r-value* with the *table r-value*. considering the instrument valid if the calculated r-value exceeded 0.602. The reliability test used Cronbach's alpha, with values ranging from 0.81 to 1.00, indicating high reliability. Both tests confirmed that the questionnaire was suitable for measuring knowledge and motivation regarding HPV vaccination at SMPN 6 Surabaya. Data analysis included both univariate and bivariate analyses. Bivariate analysis was conducted using the Spearman correlation method to assess relationships between variables.

RESULT AND DISCUSSION

The study encompassed a total of 304 participants from Junior High School 6 Surabaya, consisting of both male and female students. The demographics of the subjects, including age, gender distribution, and any relevant characteristics, are presented in Table 1.

Based on the data obtained (Table one), the characteristics of the respondents in this study include gender, age, HPV vaccination status, parent's occupations, and parent's income. Referring to Table 1, the distribution of respondent characteristics is as follows. The distribution of gender indicates that 55.2% of the total respondents are female. Based on age range, the distribution is nearly balanced, with 33.2% for the age of 14, 43.5% for the age of 15, and 32.2% for the age of 16.

HPV Vaccination Status. The total of 53.3% of the respondents have not yet received HPV vaccination, indicating that more than half of the students

have not been included in the vaccination program. A total of 281 students (92.4%) have parents who are not healthcare professionals, indicating that the majority of the respondents' parents do not come from a healthcare background.The distribution of parents' income is not significantly different, with 47.4% having an income of less than Rp. 3,499,999 and 52.6% having an income of more than Rp. 3,500,000

Table 1: Characteristics of Research Subjects

No.	Characteristic	Frequency (f)	Precentage (%)
	Gender		
1.	Male	136	44.7
2.	Female	168	55.2
	Age		
1.	14 years	101	33.2
2.	15 years	105	34.5
3.	16 years	98	32.2
	HPV Vaccination Status		
1.	Not vaccinated	162	53.3
2.	Incomplete vaccination (1 dose)	43	14.1
3.	Complete vaccination (2 dose)	99	32.6
	Parent's Occupation		
1.	Non-Health Workers	281	92.4
2.	Health Workers	23	7.6
	Parent's Income		
1.	Less than Rp. 3.499.999	144	47.4
2.	More than Rp. 3.500.000	150	52.6
	Total	304	100,0

This data provides an overview of the variation in respondent characteristics, serving as a basis for further analysis related to factors influencing knowledge and motivation regarding HPV vaccination in adolescents.

Univariate Analysis

Table 2 Knowledge Level of Free Sexual Practices with the Risk of Cervical Cancer Incidence

No.	Knowledge	Frequency (f)	Precentage (%)
1.	Good	247	81,3
2.	Moderate	46	15,1
3.	Poor	11	3,6
	Total	304	100,0

Based on table 2 if the results, the average correct answer is 6.71, the median is 7, and the mode is 8, with the smallest value being 2 points and the highest value

being 8 points. Therefore, it can be concluded that the respondent's knowledge classified into the good category. This is also evident from Table 2, which shows that the majority of respondents have a good level of knowledge about the practice of free sex with the risk of cervical cancer incidence, with a percentage of 81.3%.

Table 3 Motivation for HPV Vaccination

No	Motivation Level	Frequency (f)	Precentage (%)
1.	Very High Motivation	73	24,0
2.	High Motivation	83	27,9
3.	Moderate Motivation	91	29,9
4.	Low Motivation	45	14,8
5.	Very Low Motivation	12	3,9
	Total	304	100

Table 3 presents data on motivation for HPV vaccination. Based on the data, 91 respondents have moderate motivation for HPV vaccination. Subsequently, high motivation follows with a percentage of 27.7%, and very high motivation with 24.0%. The two lowest data points are occupied by low motivation, with a percentage of 14.8%, and very low motivation with a percentage of 3.9%

The analysis revealed a significant association between knowledge of risky sexual practices and the motivation for HPV vaccination among adolescents ($p < 0.05$). This finding supports the hypothesis that increased awareness of sexual practices correlates with higher motivation for preventive measures such as HPV vaccination.

Table 4 Correlation between Knowledge of Risky Sexual Practices and Motivation for HPV Vaccination

	Motivation for Hpv Vaccination											
Level of Knowledge	Very High Motivation		High Motivation		Moderate Motivation		Low Motivation		Very Low Motivation		p-value	r
	f	**%**	**f**	**%**	**f**	**%**	**f**	**%**	**f**	**%**	0,000	0,541
Good	72	29,1	82	33,2	74	30,0	17	6,8	2	0,8		
Moderate	1	2,2	1	2,2	17	37,0	23	50,0	4	8,7		
Poor	0	0,0	0	0,0	0	0,0	5	45,5	6	5,4		

Table 4 displays the correlation coefficients between knowledge of risky sexual practices and motivation for HPV vaccination. The strong positive correlation ($r = xx$, $p < 0.01$) signifies a robust correlation between the variables

Discussion

Knowledge Level of Students Regarding Unprotected Sexual Practices and the Occurrence of Cervical Cancer at SMPN 6 Surabaya

The study categorizes knowledge levels into three categories: good, moderate, and poor among the 304 research respondents. Factors influencing adolescent girls' knowledge levels regarding cervical cancer include awareness of preventive measures. Analysis revealed a high correctness rate among Junior High School 6 Surabaya students regarding cervical cancer prevention methods.

The correlation between preventive measures and knowledge level is closely tied to individual understanding of actions that can be taken to prevent a specific condition or disease. An individual or community's knowledge level can influence their ability to adopt and implement effective preventive measures. This aligns with Rosenstock's Health Belief Model (HBM), stating that individuals adopt health prevention behavior when they perceive a risk of a particular disease and believe that specific preventive actions are effective in reducing that risk.

Further knowledge analysis includes understanding of unprotected sexual practices. Adolescents undergo cognitive maturation during puberty, fostering open-mindedness and information processing skills, including information about unprotected sexual practices, as per Windradini's theory on cognitive maturity during adolescence.

The study also explores knowledge regarding the benefits of HPV vaccination. Cross-tabulation data reveals that the majority of respondents answered correctly. Adolescents, undergoing behavioral and response changes, seek information about potential risks and threats in their surroundings. This resonates with the Stages of Change Model by Prochaska and DiClemente, indicating that adolescents are in the stage of behavioral change, including information acceptance, consideration, and action.

Other factors related to knowledge levels include gender, where more than half of the respondents are female. Research suggests a significant relationship between gender and knowledge levels, influenced by social experiences and gender norms. Fonte VRV et al.'s (2018) study on gender and knowledge about sexually transmitted diseases supports this correlation.

Another influential factor is age. Although age distribution shows the highest frequency at 15 years, it contradicts Notoadmodjo's theory on age influencing cognitive capacity and thinking patterns. However, the researcher argues that age distribution has limited influence on knowledge levels due to the narrow age range used in the classification and the presence of other influencing factors.

Motivation for HPV Vaccination

The study findings on HPV vaccination motivation at SMPN 6 Surabaya indicate varying levels of motivation among respondents: high, very high, sufficient, low, and very low. Gender significantly influences motivation, with females showing greater interest compared to males, consistent with gender socialization theory, which suggests that gender roles and socialization impact health attitudes and behaviors..

HPV vaccination status also affects motivation, with a majority of respondents indicating they have not been vaccinated. Motivation tends to be higher among females, reflecting their awareness of cervical cancer risks and their role in family health, supported by Expectancy-Value Theory, which emphasizes the influence of expectations and values on decision-making.

Age-related factors show a concentration of respondents at 15 years old, although age alone does not significantly influence health attitudes. Parental income, exceeding Rp. 3,500,000 for over half of respondents, serves as a health resource that may increase healthcare-seeking behavior.

Parental occupation type does not directly link to vaccination motivation. The majority of respondents have non-healthcare professional parents, suggesting that parental occupation does not significantly impact adolescent motivation for HPV vaccination, consistent with Rachmani's (2013) findings.

Correlation Between Knowledge of Unprotected Sexual Practices and Cervical Cancer Risk on Motivation for HPV Vaccination

Statistical analysis using Spearman's Rank test indicates a significant correlation between knowledge of cervical cancer and motivation for HPV vaccination. Higher knowledge positively correlates with motivation for HPV vaccination, consistent with existing literature. Lack of knowledge negatively influences preventive behavior and vaccination acceptance. The study aligns with previous research by Sinthia (2018) and Choi et al. (2020), emphasizing the impact of knowledge on vaccination motivation.

The study's findings imply that knowledge about the risks of unprotected sexual practices and cervical cancer correlates with motivation for HPV vaccination. This correlation emphasizes the importance of knowledge dissemination to enhance preventive behaviors and increase HPV vaccination acceptance among adolescents

CONCLUSION AND SUGGESTION

The study concludes that knowledge about unprotected sexual practices and cervical cancer among students at Junior High School 6 Surabaya is generally good, with a significant positive correlation between knowledge and motivation for HPV vaccination. Factors such as gender, age, parental income, and parental occupation contribute to variations in knowledge levels and vaccination motivation. The results underscore the importance of targeted educational interventions to enhance awareness and motivation for HPV vaccination among adolescents.

DECLARATIONS

Conflict of Interest

Author declare there is no conflict of interest in this research

Authors' Contribution

All author contribute from concept until writing draff article.

Ethical Approval

Research Ethics Committee of Faculty o Medicine, Universitas Airlangga.

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Data Availability

The data supporting this research are available from the authors on reasonable request.

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REFERENCE

Anggraeni, L. (2021). Tingkat Pengetahuan Remaja tentang Seks Bebas. *Jurnal Ilmu Kesehatan Universitas Salakanagara*, *7*(2), 16-20. Avalaible at: https://doi.org/10.56861/jikkbh.v7i2.58

Choi, E. P. H., Wong, J. Y. H., Lau, A. Y. Y., & Fong, D. Y. T., 2018. Gender and Sexual Orientation Differences in Human Papillomavirus (HPV) Vaccine Uptake among Chinese Young Adults. *International journal of environmental research and public health*, *15*(6), pp 1099. Avalaible at: https://doi.org/10.3390/ijerph15061099

Davies, C., Stoney, T., Hutton, H., Parrella, A., Kang, M., Macartney, K., Leask, J., McCaffery, K., Zimet, G., Brotherton, J. M. L., Marshall, H. S., Skinner, S. R., & HPV.edu Study Group (2021). School-based HPV vaccination positively impacts parents' attitudes toward adolescent vaccination. *Vaccine*, *39*(30), 4190–4198. Avalaible at : https://doi.org/10.1016/j.vaccine.2021.05.051

Dewi, P.I.S., Purnami, L.A. and Heri, M., 2021. Sikap Remaja Putri tentang Kanker Serviks dengan Motivasi Remaja Melakukan Vaksinasi HPV. *Jurnal Keperawatan Silampari*, *5*(1), pp.51-58. Avalaible at: https://doi.org/10.31539/jks.v5i1.2377

Finocchario-Kessler, S., Wexler, C., Maloba, M., Mabachi, N., Ndikum-Moffor, F. and Bukusi, E., 2016. Cervical cancer prevention and treatment research in Africa: a systematic review from a public health perspective. *BMC women's health*, *16*, pp.1-25. Avalaible at: https://doi.org/10.1186/s12905-016-0306-6

Fonte VRF da, Spindola T, Francisco MTR, Sodré CP, André NLN de O, & Pinheiro CDP., 2018. Young university students and the knowledge about sexually transmitted infections. Escola Anna Nery, 22(2). Avalaible at: https://doi.org/10.1590/2177-9465-EAN-2017-0318

Globocan., 2018. International Agency For Research on Cancer.

Johnson, C. A., James, D., Marzan, A., & Armaos, M. (2019). Cervical Cancer: An Overview of Pathophysiology and Management. *Seminars in oncology nursing*, *35*(2), 166–174. Avalaible at: https://doi.org/10.1016/j.soncn.2019.02.003

Kementrian Kesehatan Indonesia (2022) *Cegah Kanker Serviks Sedari Dini*. (Ketua: Widyastuti). Jakarta: Dinas Kesehatan Provinsi DKI Jakarta

Kjaer, S. K., Dehlendorff, C., Belmonte, F., & Baandrup, L. (2021). Real-World Effectiveness of Human Papillomavirus Vaccination Against Cervical Cancer. *Journal of the National Cancer Institute*, *113*(10), 1329–1335. Avalaible at : https://doi.org/10.1093/jnci/djab080

Lestari, D.A. and Tenri Awaru, A.O., 2020. Dampak Pengetahuan Seksual Terhadap Perilaku Seks Remaja Di Kecamatan Manggala Kota Makassar. *Jurnal Sosialisasi*, *7*(1), pp.21-28. Avalaible at: https://ojs.unm.ac.id/sosialisasi/article/view/13885

Liu, Y., Di, N., & Tao, X. (2020). Knowledge, practice and attitude towards HPV vaccination among college students in Beijing, China. *Human vaccines & immunotherapeutics*, *16*(1), 116–123. https://doi.org/10.1080/21645515.2019.1638727

Melo, E. M. F. D., Linhares, F. M. P., Silva, T. M. D., Pontes, C. M., Santos, A. H. D. S., & Oliveira, S. C. D. (2019). Cervical cancer: knowledge, attitude and practice on the prevention examination. *Revista brasileira de enfermagem*, *72*, 25-31. Avalaible at: https://www.scielo.br/j/reben/a/dq5LbpXP9M9ZSFmVcsVhsZM/?format=html&lang=en

Morales-Campos, D. Y., Snipes, S. A., Villarreal, E. K., Crocker, L. C., Guerrero, A., & Fernandez, M. E. (2021). Cervical cancer, human papillomavirus (HPV), and HPV vaccination: exploring gendered perspectives, knowledge, attitudes, and cultural taboos among Mexican American adults. *Ethnicity & health*, *26*(2), 206–224. Avalaible at : https://doi.org/10.1080/13557858.2018.1494821

Peterson, C. E., Silva, A., Goben, A. H., Ongtengco, N. P., Hu, E. Z., Khanna, D., Nussbaum, E. R., Jasenof, I. G., Kim, S. J., & Dykens, J. A. (2021). Stigma and cervical cancer prevention: A scoping review of the U.S.

literature. *Preventive medicine*, *153*, 106849. Avalaible at : https://doi.org/10.1016/j.ypmed.2021.106849

Rachmani, B., Shaluhiyah, Z. and Cahyo, K., 2012. Sikap remaja perempuan terhadap pencegahan kanker serviks melalui vaksinasi HPV di kota Semarang. *Media Kesehatan Masyarakat Indonesia*, *11*(1), pp.34-41. Avalaible at: https://doi.org/10.14710/mkmi.11.1.34-41

Rosalik, K., Tarney, C., & Han, J. (2021). Human Papilloma Virus Vaccination. *Viruses*, *13*(6), 1091. Avalaible at : https://doi.org/10.3390/v13061091

Salim, E.S., Bindan, H., Pranoto, E. and Dharma, A., 2020. Analisa Metode Random Forest Tree dan K-Nearest Neighbor dalam Mendeteksi Kanker Serviks. *Jurnal Ilmu Komputer Dan Sistem Informasi (JIKOMSI)*, *3*(2), pp.97-101. Avalaible at: https://doi.org/10.9767/jikomsi.v3i2.73

Taneja, N., Chawla, B., Awasthi, A. A., Shrivastav, K. D., Jaggi, V. K., & Janardhanan, R. (2021). Knowledge, attitude, and practice on cervical cancer and screening among women in India: a review. *Cancer Control*, *28*, 10732748211010799. Avalaible at: https://doi.org/10.1177/10732748211010799

Wilson, L. A., Quan, A. M. L., Bota, A. B., Mithani, S. S., Paradis, M., Jardine, C., Hui, C., Pottie, K., Crowcroft, N., & Wilson, K. (2021). Newcomer knowledge, attitudes, and beliefs about human papillomavirus (HPV) vaccination. *BMC family practice*, *22*(1), 17. Avalaible at: https://doi.org/10.1186/s12875-020-01360-1

World Health Organization 2020, Global strategy to accelerate the elimination of cervical cancer as a public health problem