Journal of Islamic Nursing, 2025, 10(2), 45-52
DOI : https://doi.org/10.24252/join.v10i2.58482
Received September 2025, Revised November 2025, Accepted December 2025, Published December 2025

pISSN 2528-2549; eISSN 2545127

KNOWLEDGE AND PERCEPTION AS CORRELATES OF HPV VACCINATION WILLINGNESS AMONG ADOLESCENT GIRLS IN JAKARTA

Mutia Maulida[1*], Dora Samaria[1], Rita Ismail[1], Lina Ayu Marcelina[1]
[1]Department of Nursing, Universitas Pembangunan Nasional "Veteran" Jakarta, Indonesia
*E-email: mutiamaull25@gmail.com

Abstract

Introduction: The HPV vaccine effectively reduces cervical cancer incidence. In Indonesia, free HPV vaccination program is currently available for girls aged 11-12, while others must self-fund it at healthcare facilities. This quantitative cross-sectional study using the Spearman's Rank correlation examined the relationship between knowledge, perception, and willingness to receive the HPV vaccine among 190 junior high school girls in Jakarta selected through stratified random sampling. Showed that the respondents' average age was 13.97 years; most were in grade 9, had parents with a high school/equivalent education, family income below the minimum wage, and had never received information about HPV. Knowledge showed a significant positive correlation with willingness to vaccinate ($r=0.389$, $p < 0.001$), indicating a moderate association, while perception showed a weak positive correlation ($r=0.153$, $p = 0.036$). These findings highlight the importance of enhancing adolescents' knowledge and perception to increase HPV vaccine acceptance and support national efforts to achieve the WHO's cervical cancer elimination target.

Keywords: *Knowledge, Perception, Willingness to Vaccinate HPV, Adolescents*

Introduction

Cervical cancer is a gynecological cancer that can be prevented through regular screening and vaccination (Foundation for Women's Cancer, 2021). This disease caused by the Human Papillomavirus (HPV) infection, especially types 16 and 18 with several risk factors such as a history of sexually transmitted diseases, immune status, contraceptive use, young age at first pregnancy, and smoking (National Comprehensive Cancer Network, 2024); (Ruiz et al., 2024); (World Health Organization, 2024). In Indonesia, there were 36,694 new cases and 20,708 deaths due to cervical cancer (Global Cancer Observatory, 2022). According to the Ministry of Health, more than 1.7 million women in Indonesia will die at 2070 caused cervical cancer if there is no intervention at all (Kemenkes, 2022).

The World Health Organization (WHO) recommends HPV vaccination as a preventive program for cervical cancer, with the hope that 90% of girls are vaccinated against HPV at the age of 15 (Kemenkes, 2022). The HPV vaccine has been proven effective in reducing HPV infection by 86% in adolescent girls aged 14-19 years and 71% in women in their early 20s (Centers for Disease Control and Prevention, 2021). Currently, the HPV vaccine has become a national program in Indonesia since 2023 (International Vaccine Access Center (IVAC), 2023). This program is provided free of charge to girls aged 11-12 years and is included in the School-Based Immunization Month (BIAS) program (Kemenkes, 2023). Outside of that age, the public can independently get the HPV vaccine at the nearest health facility at their own expense. Despite being a national program, many people are still unaware of this preventive program.

Knowledge serves as a foundation for decision-making (Siregar, 2020). It has been found that 46.66% of parents of junior high school girls reject the HPV vaccine, with 74.1% of them distrust of the vaccine as the reason (Sangadji et al., 2024). This rejection could be due to a lack of information about the HPV vaccine. This is reflected in a research stating that 62.5% of adolescent girls have low awareness of HPV vaccination and 57.3% have low knowledge (Dwinova & Samaria, 2023). Knowledge is an internal factor of an individual that supports healthy behavior (Siregar, 2020). Beside of that, one theory that describes an individual's perception of healthy behaviors is called Health Belief Model (HBM) (Laili &

Tanoto, 2021). This theory states that a person's belief in the threat of a disease and the effectiveness of health behaviors that will lead to the adoption of healthy behaviors (LaMorte, 2022). This theory can be applied to HPV vaccination programs, where HBM is a guideline for health promotion activities and disease prevention programs (Rural Health Information Hub, 2024). The HBM is centered on the individual and consists of four main dimensions that is perceived susceptibility, perceived severity, perceived benefits, and perceived barriers (Green et al., 2020). Furthermore, it is stated that perceived susceptibility, severity, and benefits are related to an individual's willingness to be vaccinated (Lita & Herbawani, 2022).

The willingness to receive the HPV vaccine is an important factor that determines the success of immunization programs. A study in Indonesian high school students found that vaccination willingness was significantly influenced by motivation, attitudes, and knowledge about HPV (Rahmadini et al., 2024). Among Indonesian adolescents, willingness varies considerably and is shaped by factors beyond individual knowledge, including parental decision-making, school-based delivery systems, and trust in health services. Research involving mothers of school-aged girls showed that receiving clear and satisfactory health information is significantly associated with their willingness to recommend the vaccine to others (Dewi et al., 2024). Similarly, a cross-sectional study reported that parental support and positive attitudes among adolescents are strongly related to willingness to receive the HPV vaccine (Salmahella et al., 2023). These findings underscore the need to examine how adolescents' knowledge and perceptions shape their willingness to receive the HPV vaccine.

A preliminary study conducted among girls at a junior high school in Jakarta revealed that none of them had ever received any health education about the HPV vaccine and only a few students had been vaccinated against HPV. A teacher confirmed that there had been no interventions related regarding HPV at the school. Limited exposure to information about the HPV vaccine makes it necessary to investigate how knowledge and perceptions influence adolescents' willingness to receive the vaccine. Based on this background, this study aims to analyze the relationship between knowledge and perception regarding the willingness of adolescents to undergo Human Papillomavirus (HPV) Vaccination

Method

This cross-sectional quantitative study used the Spearman rank test to examine the correlation between knowledge, perception, and willingness to receive HPV vaccination. All statistical analyses were performed using IBM SPSS Statistics version 25. The population for this study comprised all 363 girl students at SMP Negeri 242 Jakarta. Using the Slovin formula, a required sample size of 109 girl students was calculated. Subsequently, stratified random sampling was employed and a random draw was conducted to select 190 respondents who participated in this study. All respondents met the criteria, which were having no allergies to the HPV vaccine and not having received two doses of the HPV vaccine. This study was conducted from November to December 2024.

Four questionnaires were used in this study, namely respondent characteristics, Human Papillomavirus Knowledge Scale (HPV-KS), Health Belief Model Scale for Human Papillomavirus and Its Vaccination (HBMS-HPVV), and Willingness to Vaccinate. The HPV-KS and HBMS-HPVV instruments were adopted from a previous study, consisting of 10 and 14 questions (Guvenc et al., 2016). Validity and reliability testing for the knowledge and perception questionnaires was conducted at a different location. The HPV-KS yielded a correlation coefficient (r) > 0.361 and a Cronbach's alpha of 0.736. Additionally, HBMS-HPVV also yielded a correlation coefficient (r) > 0.361 and a Cronbach's alpha of 0.878. These results indicate that all questionnaire items were valid and reliable. The "willingness to vaccinate" variable was measured using a dichotomous response (willing or unwilling) based on participants' answers to a single question regarding their readiness to receive the HPV vaccine.

The researcher adhered to the ethical principle of respect for persons by explaining the study, obtaining informed consent, and maintaining the confidentiality of participants' personal information. Efforts were made to ensure that the study was beneficial and that potential risks were minimized by clearly explaining all procedures. All respondents were treated fairly. This study was approved by the Research Ethics Committee (REC) of UPN "Veteran" Jakarta, with ethical clearance number 431/XI/2024/KEP, dated November 11th, 2024.

Results

Respondent Characteristics

Table 1. The Characteristics of the Respondents

Variable	Mean ± SD	Min – Max
Age	13.97 ± 0.925	12 - 16
	Frequency	**Percentage (%)**
Class		
Grade 7	59	31.1
Grade 8	58	30.5
Grade 9	73	38.4
Parental Education		
Elementary School	9	4.7
Junior High School	45	23.7
Senior High School	103	54.2
College	33	17.4
Parental Income		
< Minimum Wage (< Rp 5.067.381)	121	63.7
≥ Minimum Wage (≥ Rp 5.067.381)	69	36.3
Experience Receiving HPV Information		
Never	111	58.4
Ever	79	41.6

The distribution of respondent characteristics showed that the average age of the 190 respondents was 13.97, which was dominated by 9th grade (38.4%). Most of them have parents with only high school education (54.2%) and have incomes below the minimum wage (63.7%). Moreover, less than half of the respondents had never received an information about HPV. This result indicates a lack of exposure to information about HPV and the vaccine among schoolchildren.

The Knowledge and Perception of the Respondents

Table 2. The Knowledge and Perception of the Respondents

Variable	Mean ± SD	Min – Max
Knowledge	7.35 ± 1,206	4 – 10
Perception	40.76 ± 5,124	21 - 56

Based on the table above, the average respondent's knowledge was 7.35, with 4 being the lowest score and 10 being the highest score out of total of 10 questions. Regarding respondents' perceptions of HPV, the average value was 40.76, with the score ranging from 21 to 56. The 15 Likert-scale questions had a possible score range of 14 to 56. This indicates that respondents have fairly good knowledge and perceptions.

The Willingness to HPV Vaccination of the Respondents

Table 3. The Willingness to HPV Vaccination of the Respondents

Variable	Frequency	Percentage (%)
Willingness to HPV Vaccination		
No	33	17,4
Yes	157	82,6

Based on the processed data regarding HPV vaccination willingness, it was found that 157 respondents expressed their willingness to receive the HPV vaccine, with a percentage of 82.6%, while 33 other (17.4%) stated unwillingness to receive the HPV vaccine.

The Correlation of Knowledge with the Willingness to HPV Vaccination

Table 4. The Correlation of Knowledge with the Willingness to HPV Vaccination

Variable	Mean ± SD	Median	r	p value
Knowledge	7,35 ± 1,206	8,00	0,389	0,000
Willingness to HPV Vaccination	1,83 ± 0,380	1,00		

Based on the Spearman rank test between the knowledge and vaccination willingness, it was found that there was a significant relationship between knowledge and vaccination willingness among girls in Jakarta, which was proven by a p-value < 0.05. However, the r value of 0.389 refers to a weak relationship and a positive relationship direction. Both may have a weak relationship because there are other possible influencing factors, so that knowledge is not the main factor influencing the willingness for vaccination in junior high school students. Besides that, the positive direction of the relationship means that the higher the students' knowledge, the higher their willingness to be vaccinated.

The Correlation of Perception with the Willingness to HPV Vaccination

Tabel 5. The Correlation of Perception with the Willingness to HPV Vaccination

Variable	Mean ± SD	Median	r	p value
Perception	40,76 ± 5,124	41,00	0,153	0,036
Willingness to HPV Vaccination	1,83 ± 0,380	1,00		

Based on the correlation test between perception and vaccination willingness, it was found that there was a relationship between the two. This was proven by a p-value < 0.05 with the value of the r is 0.153, which indicates a very weak and positive relationship. This can be interpreted as the better the students' perception, the higher their willingness to get the HPV vaccine. However, the r value indicates that perception is a minor factor in students' willingness to get vaccinated.

Discussions

Adolescents in this study had an average age of 13.97 years, which corresponds to the typical age range of junior high school students in Indonesia. This age age group aligns with the WHO target for HPV vaccination, as adolescnets exhibit a stronger immunogenic response compared with older age groups (Centers for Disease Control and Prevention, 2021). Most respondents were grade 9 students, indicating whey were still in a developmental stage where health decisions are influenced by parental guidance and school-based information. Differences in grade level across studies, such as those involving older adolescents (Geopal & Mantu, 2022), may shape variations in awareness and cognitive processing related to HPV vaccination. Although HPV vaccination is also recommended for adults (Osmani et al., 2022) intervening during early adolescence remains the most effective strategy for cervical cancer prevention.

Most respondents had parents with senior high school education, a pattern also found in similar studies among school-aged adolescents (Saragih et al., 2023). Parental education level may influence the type and depth of health information available at home, affecting adolescents' understanding of HPV (Fitri & Akbar, 2021). Additionally, more than half of the respondents came from families with income below the regional minimum wage, suggesting that financial constraints may influence willingness to pursue independently funded vaccination outside school programs. Previous studies show that cost remains a major to barrier to HPV vaccine uptake (Wantini & Indrayani, 2020). Limited exposure to HPV-related information, also reflects gaps in health communication. Adolescents who receive HPV information through school or media demonstrate higher knowledge and more positive attitudes toward vaccination (Zulfa et al., 2023).

Respondents demonstrated generally knowledge about HPV and its vaccine, differing from findings in other regions such as Jayapura where adolescents showed predominantly low knowledge (D. Astuti et al., 2024). Knowledge among adolescents is shaped by exposure to educational materials, family environment, and cultural norms (Siregar, 2020). Prior research also shows that adolescents with higher HPV knowledge tend to express grater willingness to receive the vaccine

(Rahmadini et al., 2024). This underscores the importance of strengthening structured health education that provides accurate and developmentally appropriate information.

A significant association was found between knowledge and willingness to be vaccinated ($p < 0.05$) indicating that adolescents who better understand HPV are more inclined to accept vaccination. This finding is consistent with studies demonstrating that adequate knowledge supports positive vaccination attitudes (Ahmad et al., 2024); (Rahmadini et al., 2024). However, some research identified no significant relationship (Hendra & Purba, 2021), suggesting that knowledge alone may not be sufficient. Variables such as cost, availability of reliable information, and parental support may moderate the influence of knowledge on vaccination decisions (Kholifatullah & Notobroto, 2023).

Although significant, the correlation between knowledge and willingness was moderate to weak ($r = 0.389$), a range defines as weak by (Setyawan, 2022). The positive direction of this association indicates that higher knowledge is generally linked to higher willingness to receive the HPV vaccine. This pattern aligns with theoretical expectations that improved understanding of disease prevention can encourage more favourable health behaviours. However, knowledge alone does not fully guide adolescents' decisions. Many respondents had never received HPV-related information, suggestion their knowledge may be incomplete, and adolescents aged 13-14 remain heavily dependent on parental approval. Financial constraints likely weaken the overall strength of the relationship even as the positive direction remains meaningful.

Perception also showed a significant association with willingness to receive the vaccine (p value < 0.05), aligning with the HBM, which states that perceived susceptibility, severity, benefits, and barriers influence preventive health behaviors (Lita & Herbawani, 2022). Adolescents who believe in the seriousness of cervical cancer or the benefits of HPV vaccination may be more likely to accept it. However, prior studies reported inconsistent findings, with some showing no relationship between perception and vaccination intention (Sari et al., 2020); (Cahyani & Kusumawati, 2020). These discrepancies suggest that perception is shaped by complex interactions involving family factors, cultural context, and access to accurate information.

The very weak correlation between perception and willingness ($r = 0.153$) indicates that beliefs about HPV exert only minimal influence on vaccination decisions. Although the positive direction suggest that more favorable perceptions of HPV risk and vaccine benefits are associated with slightly higher willingness to be vaccinated, this effect is limited. Adolescents' perceptions at this age are often unstable and shaped by peers, misinformation, and parental attitudes. Limited exposure to reliable HPV education further restricts the formation of strong, behavior-driving perceptions. In addition, adolescents rarely make vaccination decisions independently, parental concerns about safety, cultural norms, or religious beliefs can easily override their personal views (Wubu et al., 2023). These factors collectively explain why perception demonstrates such minimal predictive power in this study.

This study has several limitations. The researcher did not supervise questionnaire completion directly, which may have introduced response bias. The absence of data on respondents' HPV vaccination history also limits the interpretation of willingness, as differences between partially vaccinated and never-vaccinated adolescents could not be explored. These considerations should be acknowledged when interpreting the findings. The findings emphasize the need to strengthen school-based HPV and cervical cancer education. Nurses and health educators play a pivotal role in delivering accurate, age-appropriate, and culturally sensitive health messages that can enhance adolescents' knowledge and perceptions. Given the strong influence of parents on vaccination decisions, interventions should include parental engagement to address concerns related to safety, cost, and cultural beliefs. Public health programs must also improve accessibility to reliable information and continue providing government-supported vaccination programs to reduce financial barriers, particularly low-income families.

Conclusion

A significant correlation was found between knowledge and willingness to receive the HPV vaccine, as well as between perception and willingness. This indicates that knowledge and perception are closely linked to an individual's willingness to get vaccinated. The greater an individual's knowledge about cervical cancer, HPV infection, or the HPV vaccine, the more likely they are to be willing to get vaccinated. Similarly, the more positive their perception, the more likely they are to be willing to get vaccinated. This relationship may be influenced by respondents' characteristics, most of whom were

13-14 years old, whose parents had a high school education, family income below the minimum wage and had never received prior information about HPV. Limited access to information and socioeconomic constraints might have contributed to lower perception and awareness regarding the vaccine. Strengthening school-based health education and communication strategies, involving healthcare providers in counseling about HPV vaccination, and expanding government-supported vaccination programs are essential to improve vaccine acceptance. Future research should consider longitudinal or interventional approaches to evaluate the effectiveness of educational programs and policy efforts in shaping adolescents' perceptions and willingness to receive the HPV vaccine.

Conflicting Interest

All authors declare no conflict of interest.

References

Ahmad, N., Budiana, I. N. G., Surya, I. G. N. H. W., & Pangkahila, E. S. (2024). Hubungan Tingkat Pengetahuan Dengan Sikap Kesediaan Melakukan Vaksinasi Human Papillomavirus Pada Siswi Sekolah Menengah Negeri 3 Kota Bima. *E-Jurnal Medika Udayana*, *13*(8), 71. https://doi.org/https://doi.org/10.24843/MU.2024.V13.i08.P13

Astuti, D., Mendrofa, H. K., Boli, E. B., Pasangka, O., & Watunglawar, C. E. (2024). Pengetahuan Dan Sikap Mahasiswi Keperawatan Tentang Vaksinasi Hpv (Human Papilloma Virus) Di Kota Jayapura. *Jurnal Keperawatan Dirgahayu (JKD)*, *6*(1), 16–23.

Cahyani, N. P., & Kusumawati, Y. (2020). Hubungan Pengetahuan dan Persepsi Tentang Kanker Serviks dengan Perilaku Pencegahan Kanker Serviks dengan Vaksin HPV Pada Mahasiswi Bidang Kesehatan Universitas Muhammadiyah Surakarta. *Universitas Muhammadiyah Surakarta*.

Centers for Disease Control and Prevention. (2021). *HPV Vaccine Safety and Effectiveness*. Centers for Disease Control and Prevention. https://www.cdc.gov/vaccines/vpd/hpv/hcp/safety-effectiveness.html

Dewi, S. M., Utomo, A. J., Bennett, L. R., Wilopo, S. A., & Barrett, A. (2024). Indonesian Mothers' Experience of Their Daughter's HPV Vaccination, and Factors Associated with Their Willingness to Recommend HPV Vaccination for Girls. *Vaccines*, *12*(9), 1–13. https://doi.org/10.3390/vaccines12090998

Dwinova, R., & Samaria, D. (2023). Correlation Between Knowledge and Awareness of Human Papillomavirus Vaccine Among Adolescent Girls in Junior High School. *Nursing Current: Jurnal Keperawatan*, *11*(2). https://doi.org/10.19166/nc.v11i2.7581

Fitri, A., & Akbar, A. (2021). Hubungan Pengetahuan dan Sikap Remaja Putri Tentang Infeksi dan Vaksinasi Human Papillomavirus Dikelurahan Bulian Kota Tebing Tinggi. *Jurnal Implementa Husada*, *2*(3), 321–327.

Foundation for Women's Cancer. (2021). CERVICAL CANCER Your Guide. *E Society of Gynecologic Oncology.*, 1–20.

Geopal, J. R., & Mantu, M. R. (2022). Gambaran Tingkat Pengetahuan Siswi SMA N 3 Kota Jambi Mengenai Vaksin HPV pada Januari-Maret 2022. *Malahayati Nursing Journal*, *4*(11), 3049–3057. https://doi.org/10.33024/mnj.v4i11.7434

Global Cancer Observatory. (2022). *Cancer Today: Indonesia*. Global Cancer Observatory. https://doi.org/10.1002/ijc.33588

Green, E. C., Murphy, E. M., & Gryboski, K. (2020). The Health Belief Model. *The Wiley Encyclopedia of Health Psychology*, *2*, 3–6. https://doi.org/10.1002/9781119057840

Guvenc, G., Seven, M., & Akyuz, A. (2016). Original Study Health Belief Model Scale for Human Papilloma Virus and its Vaccination : Adaptation and Psychometric Testing. *Journal of Pediatric and Adolescent Gynecology*, *29*, 252–

258. 10.1016/j.jpag.2015.09.007

Hendra, & Purba, S. D. (2021). Hubungan Tingkat Pengetahuan Kanker Serviks Dengan Minat Untuk Vaksinasi HPV Pada MahasiswiI Fakultas Kedokteran Universitas HKBP Nommensen Medan. *Nommensen Journal of Medicine*, *6*(2), 58–61. https://doi.org/10.36655/njm.v6i2.492

International Vaccine Access Center (IVAC). (2023). *Next Steps for HPV Vaccine Advocacy in Indonesia*. 1–2.

Kemenkes. (2022). National Cervical Cancer Elimination Plan for Indonesia 2023-2030. In *Ministry of Health of Republic of Indonesia*. https://www.kemkes.go.id/eng/national-cervical-cancer-elimination-plan-for-indonesia-2023-2030

Kemenkes. (2023). *Kemenkes Canangkan Perluasan Imunisasi Gratis Untuk Cegah Kanker Leher Rahim*. Kementerian Kesehatan RI. https://sehatnegeriku.kemkes.go.id/baca/umum/20230809/5743643/kemenkes-canangkan-perluasan-imunisasi-gratis-untuk-cegah-kanker-rahim/

Kholifatullah, A. I., & Notobroto, H. B. (2023). Hubungan Dukungan Sosial Dengan Niat Imunisasi Human Papillomavirus Sebagai Pencegahan Kanker Serviks. *Jurnal Kesehatan Tambusai*, *4*(3), 3699–3707. https://doi.org/10.31004/jkt.v4i3.17454

Laili, N., & Tanoto, W. (2021). Model Kepercayaan Kesehatan (Health Belief Model) Masyarakat Pada Pelaksanaan Vaksin Covid-19. *Jurnal Ilmiah Kesehatan Keperawatan*, *17*(3), 198. https://doi.org/10.26753/jikk.v17i3.625

LaMorte, W. W. (2022). *Behavioral Change Models*. Boston University School of Public Health.

Lita, A. N., & Herbawani, C. K. (2022). Analysis of Health Belief Model regarding Human Papillomavirus Vaccination among Female Employees at Sukabumi Regency Government. *Embrio: Jurnal Kebidanan*, *14*(2), 227–237. https://doi.org/10.36456/embrio.v14i2.3367

National Comprehensive Cancer Network. (2024). NCCN 2024 cervical patient guideline. In *NCCN.org/patients – For Patients*. NCCN.org/patients – For Patients

Osmani, V., Fett, S., Tauscher, M., Donnachie, E., Schneider, A., & Klug, S. J. (2022). HPV vaccination leads to decrease of anogenital warts and precancerous lesions of the cervix uteri in young women with low vaccination rates: a retrospective cohort analysis. *BMC Cancer*, *22*(1), 1–12. https://doi.org/10.1186/s12885-022-10214-1

Rahmadini, A. F., Zakiah, L., Yusnia, N., Rasyidin, F., & Willia, Y. (2024). Faktor-faktor yang Berhubungan dengan Siswa-Siswi Terhadap Kesediaan Untuk Vaksinasi HPV (Human Papillomavirus). *Journal of Midwifery Care*, *5*(01), 28–34. https://doi.org/10.34305/jmc.v5i1.1323

Ruiz, V. V., Xicotencatl, L. G., Contreras, O. M., & Lizano, M. (2024). Molecular aspects of cervical cancer: a pathogenesis update. *Frontiers in Oncology*, *14*(March), 1–8. https://doi.org/10.3389/fonc.2024.1356581

Rural Health Information Hub. (2024). *The Health Belief Model*. University of Minnesota Rural Health Research Center and NORC Walsh Center for Rural Health Analysis. https://www.ruralhealthinfo.org/toolkits/health-promotion/2/theories-and-models/health-belief

Salmahella, D., Salim, L. A., & Isfandiari, M. A. (2023). Sikap, Jarak Pelayanan Kesehatan dan Dukungan Orang Tua Untuk Kesediaan Vaksinasi HPV Pada Remaja. *Journal of Telenursing (JOTING)*, *5*(1), 31–41. https://doi.org/https://doi.org/10.31539/menulis.v5i1.5305

Sangadji, N. W., Ayu, I. M., & Veronika, E. (2024). Faktor yang Berhubungan dengan Penerimaan Vaksin HPV. *Jurnal Ilmiah Ilmu Keperawatan Dan Ilmu Kesehatan Masyarakat*, *19*(01), 55–60.

Saragih, N. L., Purwarini, J., & Prabawati, F. D. (2023). Hubungan Pengetahuan Dengan Sikap Orang Tua Dalam Pemberian Vaksinasi Human Papilloma Virus (HPV) Pada Remaja Putri SMP X Jakarta. *Jurnal Keperawatan Cikini*, *4*(1), 24–31.

Sari, A. D., Lutfi, N., Syadida, H., Dirani, D., Cholifah, N., Asriningrum, T. P., Yekti, P. K., Binati, B., Cahyasari, I. A.,

Hidayatullah, N. S., Mulya, L. A., Firman, A. T., & Nugraheni, G. (2020). Profil Pengetahuan Dan Keyakinan Vaksinasi Hpv Sebagai Upaya Pencegahan Kanker Serviks Pada Mahasiswi Di Universitas Airlangga, Surabaya. *Jurnal Farmasi Komunitas*, *6*(1), 14. https://doi.org/10.20473/jfk.v6i1.21824

Setyawan, D. A. (2022). Statistika Kesehatan Analisis Bivariat Hipotesis Penelitian. In A. B. Astuti & W. Setyaningsih (Eds.), *Tahta Media Group* (Vol. 1). Tahta Media Group. https://poltekkes-solo.ac.id/cni-content/uploads/modules/attachments/20230815160540-2023-BUKU AJAR STATISTIKA KESEHATAN-Analisis Bivariat Pada Hipotesis Penelitian (2).pdf

Siregar. (2020). *Buku Ajar Promosi Kesehatan*. Universitas Islam Negeri Sumatera Utara.

Wantini, N. A., & Indrayani, N. (2020). Kesediaan Vaksinasi HPV pada Remaja Putri Ditinjau dari Faktor Orang Tua. *Jurnal Ners Dan Kebidanan (Journal of Ners and Midwifery)*, *7*(2), 213–222. https://doi.org/10.26699/jnk.v7i2.art.p213-222

World Health Organization. (2024). *Cervical Cancer*. Wolrd Health Organization. https://www.who.int/news-room/fact-sheets/detail/cervical-cancer

Wubu, A., Balta, B., Cherie, A., & Bizuwork, K. (2023). Perception About Human Papillomavirus Vaccination Among Middle Adolescent School Girls in Addis Ababa, Ethiopia 2023: Qualitative Study. *BMC Women's Health*, *23*(1), 1–10. https://doi.org/10.1186/s12905-023-02660-1

Zulfa, A., Lismidiati, W., & Kustanti, A. (2023). Gambaran Pengetahuan, Sikap, dan Penerimaan Orang Tua terhadap Vaksinasi HPV di SMP Kota Yogyakarta. *Jurnal Keperawatan Klinis Dan Komunitas (Clinical and Community Nursing Journal)*, *7*(2), 69. https://doi.org/10.22146/jkkk.71832