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Original Research

Factors Associated with The Willingness of Women of Childbearing Age to Undergo Visual Inspection with Acetic Acid (VIA) At Curug Primary Health Center

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A R T I C L E I N F O

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A B S T R A C T

Cervical cancer is the second leading cause of death for women in Indonesia. One method of early detection is the Visual Inspection with Acetic Acid (VIA) test. This study aimed to identify factors influencing the willingness of women of childbearing age to undergo VIA testing in the working area of Curug Health Center, Tangerang Regency. The study population consisted of 34,290 women of childbearing age. An analytical cross-sectional design was employed, and 395 participants were selected using an accidental sampling technique. Data were analyzed using univariate analysis, bivariate analysis with the chi-square test, and multivariate analysis using multiple logistic regression. The Results of education ($p = 0.038$), knowledge ($p = 0.026$), attitudes ($p = 0.007$), and husbands' support ($p < 0.001$) were significantly associated with the willingness to undergo VIA testing. Husbands' support emerged as the most dominant factor influencing willingness to participate in VIA screening. The conclusion is that education level, knowledge, attitudes, and husbands' support were identified as key factors influencing women's willingness to undergo VIA testing. Recommendations are that Efforts to improve awareness and understanding of early cervical cancer detection among women of childbearing age in the Curug Health Center working area are essential to increase participation in VIA screening.

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INTRODUCTION

Cervical cancer is a condition characterized by uncontrolled cell growth in the cervical region, primarily caused by persistent infection with the Human Papillomavirus (HPV). Common signs and symptoms include postcoital bleeding, foul-smelling vaginal discharge, persistent vaginal bleeding, and pelvic or genital pain (Novalia, 2023). Several risk factors associated with cervical cancer include early onset of sexual activity (particularly before the age of 16), multiple sexual partners, long-term contraceptive use, immunocompromised conditions such as HIV infection, and smoking (Oktafiah et al., 2023).

According to Irwan (2016), the progression of cervical cancer is often asymptomatic and slow, typically taking 10–20 years to develop, which results in late-stage diagnosis and higher mortality rates. Early detection is therefore a crucial preventive strategy to reduce cervical cancer morbidity and mortality. Several screening methods are available, including colposcopy, cervical biopsy, Pap smear testing, and Visual Inspection with Acetic Acid (VIA). In Indonesia, VIA screening has been adopted as a national policy to enhance early detection and reduce cervical cancer incidence. According to the World Health Organization (WHO, 2022), there were approximately 604,000 new cases of cervical cancer worldwide in 2020, with 342,000 related deaths.

Data from The Global Cancer Observatory (GLOBOCAN, 2020) indicate that cervical cancer ranks second among the most common cancers in Indonesia, with 36,633 cases, accounting for approximately 9.2% of all cancer cases. In Tangerang Regency, 334 cases of cervical cancer were reported in 2022, based on data from the local Health Office (Dinas Kesehatan Kabupaten Tangerang, 2022). Despite the increasing incidence of cervical cancer, participation in early detection programs among women of childbearing age remains low. Previous studies have consistently reported that education level, knowledge, attitudes, and husbands' support are key factors influencing women's willingness to undergo VIA screening (Sagita & Rohmawati, 2020; Musallina, 2020; Mardianti, 2019; Izah et al., 2022; Nasution, 2021).

According to the Ministry of Health of the Republic of Indonesia (Kemenkes RI, 2022), 89% of districts and cities in Indonesia have implemented cervical cancer early detection programs. In Tangerang Regency, VIA and Clinical Breast Examination (SADANIS) screenings were conducted among 18,478 women of childbearing age between 2019 and 2021 (Dinas Kesehatan Kabupaten Tangerang, 2020). The highest screening coverage was reported at Bojong Kamal Community Health Center (13.6%), whereas coverage at Curug Community Health Center was only 5.1%, far below the national target. Data from Curug Community Health Center indicate that 34,290 women aged 15–49 years reside within its service area, spread across four villages and two sub-districts. Between January and March 2023, only 130 women underwent VIA screening, all with negative results.

An initial survey conducted through interviews with 20 women of childbearing age at Curug Community Health Center revealed limited awareness of cervical cancer and VIA screening. Only six respondents were aware of cervical cancer; among them, four were familiar with the VIA test, while two were not. Only one respondent had ever undergone a VIA test, with a negative result.

These findings indicate that the majority of women of childbearing age in the Curug Community Health Center working area have not participated in early cervical cancer detection through VIA screening. Contributing factors include low educational attainment, limited knowledge, indifferent attitudes toward screening, and lack of husbands' support. Based on these observed conditions, this study aims to examine the factors influencing the willingness of women of childbearing age to undergo VIA testing in the working area of Curug Health Center, Tangerang Regency.

METHOD

Prior to data collection, ethical approval was obtained from the Ethics Committee of the Faculty of Nursing, Pelita Harapan University (No. 021/KEPFON/I/2024). Following ethical clearance, a research permit was issued by the Faculty of Nursing and subsequently approved by the Tangerang Regency Health Office, Banten Province. The study was then conducted at Curug Community Health Center, Tangerang Regency.

This study employed a quantitative analytical survey with a cross-sectional design. The study population consisted of women of childbearing age (15–49 years) residing in the working area of Curug Community Health Center, Tangerang Regency. A total of 395 participants were recruited using an accidental sampling technique. Inclusion criteria were married women living with their husbands who agreed to participate in the study, while women diagnosed with cervical cancer were excluded.

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Data were collected using a structured, closed-ended questionnaire adapted from previous research conducted by Lestari (2016), entitled *"Factors Influencing the Willingness of Women of Childbearing Age to Undergo Early Detection of Cervical Cancer at Manahan Community Health Center, Surakarta."* The questionnaire had previously undergone validity and reliability testing. The knowledge variable consisted of 14 items, with a Cronbach's alpha of 0.864, indicating good reliability; all item correlation coefficients exceeded the r-table value of 0.468. The attitude variable included 10 items, with a Cronbach's alpha of 0.892, while the husbands' support variable consisted of seven items, with a Cronbach's alpha of 0.847. All items demonstrated acceptable validity, with correlation coefficients exceeding the r-table value of 0.468.

Data collection was conducted between March and April 2024 in the working area of Curug Community Health Center. Data were collected in three stages: research preparation, field data collection, and data completion. During the field stage, participants were recruited through door-to-door visits accompanied by community

health cadres, as well as during activities at Integrated Service Posts (Posyandu) and the Community Health Center. Participants were informed of the study objectives, and assistance was provided during questionnaire completion when needed.

Data analysis was performed using univariate analysis to describe frequency distributions, bivariate analysis using the Chi-square test, and multivariate analysis using multiple logistic regression. Throughout the research process, ethical principles were upheld, including respect for persons, beneficence, non-maleficence, and justice. This study was conducted in accordance with ethical standards and approved by the Ethics Committee of the Faculty of Nursing, Pelita Harapan University (No. 021/KEPFON/I/2024).

RESULT

Respondent Characteristics

This study described several respondent characteristics, including age, employment status, number of children, and contraceptive use.

Table 1. Frequency Distribution of Characteristics (n=395)

Characteristics	Frequency (n)	Percentage (%)
Age		
15-24 years	25	63
25-34 years	167	42.3
35-44 years	143	36.2
45-49 years	60	15.2
Working		
Not employed	347	87.8
Employed	48	12.2
Number of Children		
Don't have children yet	15	3.8
1 Child	91	23
2 Children	168	42.6
3 Children	91	23
More than 3 Children	30	7.6
Contraceptive Use		
Not using birth control	149	37.7
Using birth control	246	62.3

Based on Table 1, a total of 395 women of childbearing age participated in the study. The majority of respondents were aged 25–34 years (42.3%). Regarding employment status, most respondents were unemployed (87.8%). In terms of parity, most respondents had two children (42.6%). With respect to contraceptive use, 246 respondents (62.3%) reported using contraception, while 149 respondents (37.7%) did not use any contraceptive method.

Table 2. Frequency Distribution of Willingness to IVA Test (n=395)

Category	Frequency (n)	Percentage (%)
Not Willingness	183	46.3
Willingness	212	53.7
Total	395	100

Of the 395 respondents, 212 women (53.7%) were willing to undergo the IVA test, while 183 women (46.3%) were not willing.

Table 3. Education Frequency Distribution (n=395)

Category	Frequency (n)	Percentage (%)
Low	174	44.1
High	221	55.9
Total	395	100

Table 3 presents the distribution of respondents based on educational level. Of the 395 respondents, 221 women (55.9%) had a higher educational level (senior high school/vocational school to university), while 174 women (44.1%) had a lower educational level.

Table 4. Frequency Distribution of Knowledge (n=395)

Category	Frequency (n)	Percentage (%)
Good	88	22.3
Enough	156	39.5
Not Enough	151	38.2
Total	395	100

Table 4 presents the distribution of respondents' knowledge regarding cervical cancer and IVA testing. Most respondents demonstrated sufficient knowledge (39.5%), followed by poor knowledge (38.2%), while 22.3% had good knowledge.

Table 5. Attitude Frequency Distribution (n=395)

Category	Frequency (n)	Percentage (%)
Negative	190	48.1
Positive	205	51.9
Total	395	100

Table 5 shows respondents' attitudes toward IVA testing. Of the 395 respondents, 205 women (51.9%) had a positive attitude, while 190 women (48.1%) had a negative attitude.

Table 6. Frequency Distribution of Husband's Support (n=395)

Category	Frequency (n)	Percentage (%)
Negative	161	40.8
Positive	234	59.2
Total	395	100

Based on the table above, most respondents reported positive husband support (59.2%), while 40.8% reported negative support.

Table 7. The Bivariate Analysis Examining Factors Associated with Willingness to Undergo IVA Testing

	Willingness for IVA test						
	Willing		Not Willing			Percentage	
Factors	n	%	n	%	Total	(%)	*p-value*

Education	78	36.7	96	52.45	174	44.05	
Low	134	63.3	87	47.55	221	55.95	0.002
Higher							
Knowledge	29	33.0	59	27.86	88	22.28	
Good	62	33.8	94	44.33	156	39.49	0.000
Enough	92	50.2	59	27.83	151	38.23	
Poor							
Attitude	74	34.9	116	63.38	190	48.1	
Negative	138	65.1	67	36.62	205	51.9	0.000
Positive							
Husband's Support	54	25.47	107	58.46	161	40.76	
Negative	158	74.53	76	41.53	234	59.24	0.000
Positive							

Among respondents who were willing to undergo the IVA test, 134 women (63.3%) had higher education. Chi-square analysis demonstrated a statistically significant relationship between educational level and willingness to undergo IVA testing ($p = 0.002$). Regarding knowledge, 92 respondents (50.2%) with poor knowledge were still willing to undergo IVA testing. The chi-square test indicated a significant association between knowledge level and willingness to undergo IVA testing ($p < 0.001$).

With respect to attitude, 138 respondents (65.1%) with a positive attitude were willing to undergo IVA testing, and attitude was significantly associated with willingness to undergo IVA testing ($p < 0.001$). Similarly, 158 respondents (74.5%) who reported positive husband's support were willing to undergo IVA testing. The chi-square analysis showed a significant association between husband's support and willingness to undergo IVA testing ($p < 0.001$).

Table 8. Multivariate Analysis of Factors Affecting Women of Childbearing Age's Willingness to Undertake IVA Test

			95% CI for Exp (B)	
Factors	**p-value**	**Exp (B)**	**Lower**	**Upper**
Education	0.038	1.608	1.027	2.519
Knowledge	0.026	0.706	0.520	0.960
Attitude	0.007	1.896	1.190	3.019
Husband' support	0.000	3.397	2.158	5.348
Constant	0.368	0.665		

Based on Table 8, all four independent variables, education, knowledge, attitude, and husband's support, showed p-values below 0.05, indicating a statistically significant association with willingness to undergo IVA testing. This finding suggests that education level, knowledge, attitude, and husband's support influence women's willingness to undertake the IVA test in the Curug Community Health Center working area. For the education variable, women with higher education were more likely to undertake the IVA test compared to women with lower education (Exp(B) = 1.608). For the knowledge variable, women with better knowledge had a higher likelihood of being willing to undertake the IVA test compared to women with sufficient or poor knowledge (Exp(B) = 0.706). Furthermore, women with a positive attitude tended to be more willing to undertake the IVA test compared to women with a negative attitude (Exp(B) = 1.896).

Husband's support was identified as the strongest influencing factor, showing that women with positive husband's support were more likely to undertake the IVA test compared to women who received negative husband's support (Exp(B) = 3.397).

DISCUSSION

Influence of Education on Willingness to IVA Test

Based on the results of the study, a significant association was found between education level and women of childbearing age's willingness to undergo the IVA test, with a p-value of 0.038 ($p < 0.05$). This indicates that education level influences women's willingness to participate in IVA testing. This finding is consistent with the studies by Handayani (2018) and other related research, which also reported a significant relationship between education and willingness to undergo IVA screening. Higher educational attainment facilitates access to and understanding of information related to the importance of early cervical cancer detection, whereas lower education levels may limit comprehension and reduce willingness to undergo VIA testing. This result is also in line with the study by Siregar et al. (2021), which demonstrated a significant relationship between education and VIA test behavior, with a p-value of 0.003 ($p < 0.05$). These findings support the role of education in shaping health-related decision-making among women of childbearing age.

Education is defined as a process of individual development that shapes attitudes and behaviors within society (Rafikasariy, 2019). Musallina (2020) classified education into lower education (elementary to junior high school) and higher education (senior high school to university). The higher a person's level of education, the easier it is to receive and process health-related information, which in turn increases knowledge. Conversely, lower educational levels may hinder access to information regarding Visual Acetic Acid Inspection (VIA), thereby reducing the likelihood of undergoing the test. Education, therefore, plays a crucial role in shaping knowledge and awareness, including understanding the importance of early cervical cancer detection (Manihuruk Arina et al., 2021).

Influence of Knowledge on Willingness to IVA Test.

Knowledge in this context refers to women of childbearing age's understanding of cervical cancer and its early detection. Adequate knowledge about cervical cancer can increase willingness to undergo the VIA test, as awareness of personal health risks encourages preventive behavior. Conversely, limited knowledge may reduce willingness to participate in early detection. Information related to cervical cancer can be obtained from various sources, including mass media, informational brochures, interactions with family members and peers, and communication with health workers and community health cadres.

Based on the study findings, a significant relationship was identified between knowledge level and willingness to undergo the IVA test, with a p-value of 0.026 ($p < 0.05$). This indicates that women's level of knowledge influences their willingness to undergo IVA testing in the Curug Health Center working area. This result is consistent with the findings of Lestari (2016) and other studies demonstrating that knowledge significantly influences women's willingness to participate in IVA screening. Although knowledge is an important determinant, it alone may not be sufficient to bring about behavioral change, as other psychosocial factors may also play a role.

Influence of Attitude on Willingness to IVA Test

The results of this study indicate a significant association between attitude and women of childbearing age's willingness to undergo the IVA test, with a p-value of 0.007 ($p < 0.05$). This finding suggests that attitude is an influential factor in determining women's willingness to participate in IVA screening in the Curug Health Center working area.

This finding is supported by studies conducted by Risliana et al. (2024), which reported a significant relationship between attitudes and early cervical cancer detection behavior through VIA examination. Women with negative attitudes were more likely to avoid VIA screening compared to those with positive attitudes. Similarly, Audina et al. (2023) reported a significant association between attitudes and women's willingness to undergo VIA screening (p-value = 0.019), indicating that more positive attitudes are associated with greater willingness to participate in screening.

Consistent findings were also reported by Putinah et al. (2023), who identified a significant relationship between attitude and women's interest in undergoing VIA examination (p-value = 0.004). Likewise, Ariana and Nursanti (2018) concluded that attitude significantly influenced women's participation in VIA examinations at the Ancol Village Health Center.

Attitude is defined as a closed response or internal reaction toward an object or situation (Lestari, 2016). Risliana et al. (2024) noted that positive attitudes toward health do not always translate into action, as they may be influenced by personal experiences or social perceptions. Conversely, negative attitudes toward the VIA test are

often associated with a limited understanding of the procedure, including its purpose and benefits.

The Influence of Husband's Support on Willingness to IVA Test

The results of this study demonstrate a significant association between husband's support and women of childbearing age's willingness to undergo the IVA test, with a p-value of 0.000 ($p < 0.05$). This indicates that husbands' support plays an important role in influencing women's willingness to participate in IVA screening in the Curug Health Center working area. Based on the Exp(B) or odds ratio (OR) value of 3.397, husband's support emerged as the most dominant factor influencing women's willingness to undergo the IVA test compared to other variables examined.

These findings are consistent with studies conducted by Risliana et al. (2024) and others, which reported a strong influence of husband's support on women's participation in IVA screening. Compared to education, knowledge, and attitude, husband's support was identified as the most influential factor in encouraging early detection of cervical cancer among women of childbearing age.

Husbands' support represents a critical form of internal social support that contributes to improving women's reproductive health. As the closest partner, the husband can encourage healthy behaviors and support health-related decision-making (Lestari, 2016). Sundari and Setiawati (2018) also reported that husbands' support significantly increases the likelihood of women undergoing early cervical cancer detection. Support from close family members can strengthen motivation and readiness to act, highlighting the importance of involving husbands in reproductive health education. Therefore, information regarding cervical cancer and the VIA test should target not only women but also their husbands, to promote shared responsibility for reproductive health (Sundari & Setiawati, 2018).

CONCLUSION

Most respondents in the Curug Community Health Center working area were aged 25–34 years, had a higher level of education, and were more willing to undergo early detection of cervical cancer through the IVA test. The majority of women of childbearing age (WUS) with positive attitudes were willing to participate in IVA testing. In addition, most WUS who received positive support from their husbands were willing to undergo early detection using the IVA test.

The results of the analysis indicate that education level, knowledge, attitudes, and husbands' support significantly influence the willingness of women of childbearing age to undergo IVA testing in the Curug Community Health Center working area. Husbands' support was identified as the most dominant factor influencing WUS's willingness to undertake the IVA test.

Health workers are encouraged to involve husbands in health promotion activities and provide health education. It is hoped that future researchers can further contribute to increasing knowledge regarding the factors influencing women of childbearing age's willingness to undergo early detection of cervical cancer through the IVA test.

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REFERENCES

Ariana, A., & Nursanti, I. (2018). Faktor-Faktor Yang Berhubungan Dengan Keikutsertaan Wanita Usia Subur Dalam Pemeriksaan IVA Di Puskesmas Kelurahan Ancol Tahun 2018. https://perpus.fikumj.ac.id/index.php?p=fstream-pdf&fid=10340&bid=4471

Audina, M., Suratmi, T., & Samingan. (2023). Pemeriksaan IVA (Inspeksi Visual Asam Asetat) Pada Wanita Usia Subur di Wilayah Kerja Puskesmas Simpang Katis Kabupaten Bangka Tengah Tahun 2021. *Jurnal Untuk Masyarakat Sehat (JUKMAS)*, *7*(1), 27–44. http://ejournal.urindo.ac.id/index.php/jukmas

Dinas Kesehatan Kabupaten. Tangerang. (2020). Profil Kesehatan Kab. Tangerang 2020. *Dinas Kesehatan Kab. Tangerang*. Retrieved from: https://s.id/profilkesehatankabupatentangerang2020

Handayani, L. T. (2018). Kajian Etik Penelitian Dalam Bidang Kesehatan Dengan Melibatkan Manusia Sebagai Subyek. *The Indonesian Journal of Health Science, 10*(1), 2087–5053. https://doi.org/https://doi.org/10.32528/the.v10i1.1454

Irwan. (2016). *Epidemiologi Penyakit Tidak Menular*. Yogyakarta: Deepublish.

Izah, Y. N., Octaviana, D., & Nurlaela, S. (2022). Faktor-Faktor yang Berpengaruh terhadap Deteksi Dini Kanker Leher Rahim Metode IVA di Kabupaten Banyumas (Studi di Puskesmas Cilongok I). *Jurnal Epidemiologi Kesehatan Komunitas*, *7*(2), 553–561.
https://doi.org/https://doi.org/10.14710/jekk.v7i2.13768

Kemenkes RI. (2022). *Laporan Kinerja 2022*. http://p2p.kemkes.go.id/wp-content/uploads/2023/03/LAKIP-Setditjen-P2P-Tahun-2022.pdf

Lestari, I. S., Yuli Kusumawati, S. K. M., & Werdani, K. E. (2016). *Faktor-faktor yang mempengaruhi kesediaan wus dalam melakukan deteksi dini kanker serviks di puskesmas manahan surakarta* (Doctoral dissertation, Universitas Muhammadiyah Surakarta).

Manihuruk Arina, S., Asriwati, & Tarigan Sirebo, J. (2021). Analisis Faktor Yang Mempengaruhi Perilaku Ibu Dalam Pelaksanaan Tes IVA Di Wilayah Kerja Puskesmas Hutarakyat Kabupaten Dairi Tahun 2019. *Jurnal Kesehatan Masyarakat*, *8*(2), 238–260.

https://doi.org/https://doi.org/10.31596/jkm.v8i2.686

Mardianti, M. (2019). Faktor-Faktor Yang Berhubungan Dengan Perilaku Wanita Usia Dalam Melakukan Deteksi Dini Kanker Serviks Di Desa Jatimulya Wilayah Kerja Puskesmas Pedes Kabupaten Karawang. *Jurnal Kebidanan*, *8*(1), 8-17.

Musallina, A. (2020). Faktor-Faktor Yang Mempengaruhi Perilaku Deteksi Dini Kanker Serviks Pada WUS Di Wilayah Kerja Puskesmas Pandak II Tahun 2020. *Skripsi Prodi Sarjana Terapan Kebidanan Politeknik Kesehatan Kementerian Kesehatan Yogyakarta*. http://eprints.poltekkesjogja.ac.id/3427/1/Awal.pdf

Putinah, Afriyani, R., Fatriansari, A., Apriani, & Desvitasari, H. (2023). Faktor Yang Berhubungan Dengan Minat Wanita Usia Subur Dalam Pemeriksaan Inspeksi Visual Asam Asetat. *Jurnal Kesehatan Tambusai* , *4*(4), 5448–5455. https://doi.org/https://doi.org/10.31004/jkt.v4i4.20638

Rafikasariy, S. (2019). Faktor Yang Berhubungan Dengan Perilaku Deteksi Dini Kanker Serviks Dengan Metode Inspeksi Visual Asam Asetat (IVA) (Studi Kasus Pelaksanaan Deteksi Dini Kanker Serviks pada Pasangan. *Skripsi Program Studi Kesehatan Masyarakat Sekolah Tinggi Ilmu Kesehatan Bhakti Husada Mulia Madiun*. http://repository.stikes-bhm.ac.id/id/eprint/621

Risliana, Lilia, D., & Heryanto, E. (2024). Faktor-faktor yang Berhubungan dengan Perilaku Wanita Usia Subur (WUS) dalam Deteksi Dini Kanker Serviks dengan Metode Iva Test. *Jurnal Penelitian Perawat Profesional*, *6*(2), 527–536. https://doi.org/https://doi.org/10.37287/jppp.v6i2.2162

Siregar, M., Panggabean, H. W., & Simbolon, J. L. (2021). Faktor-Faktor Yang Mempengaruhi Perilaku Pemeriksaan IVA Test Pada Wanita Usia Subur Di Desa Simatupang Kecamatan Muara Tahun 2019. *Jurnal Kesehatan Masyarakat Dan Lingkungan Hidup*, *6*(1), 32–48. https://doi.org/10.51544/jkmlh.v6i1.1918