

Original research article

Cervical Cancer Knowledge, Attitudes, and VIA Willingness among Married Women

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ABSTRACT

Background: Indonesia has the highest rate of cervical cancer in Southeast Asia. However, early detection through Visual Inspection of Acetate Acid (VIA) among Women of Childbearing Age (WCA) in Indonesia, including Jambi City, remains low. This research aims to determine knowledge and attitudes toward cervical cancer prevention, and the willingness undergo VIA examination among married WCA at the Kenali Besar Public Health Center in Jambi City. **Methods:** An observational-analytical study with a cross-sectional design was conducted using questionnaires. 110 samples were chosen by accidental sampling technique and analyzed using descriptive statistics. **Results:** Most participants were in early adulthood (52.7%), had secondary education (50.9%), were unemployed (59.1%), had sufficient knowledge (40%) and attitudes (51.8%), but low willingness for VIA (47.3%). The main reason for not undergoing VIA was the absence of symptoms (22.7%). Most who had VIA had only been tested once (70%), with all results negative (100%). **Conclusion:** The willingness to undergo VIA screening is still low. Increasing the VIA screening coverage requires the improvement of knowledge about cervical cancer and attitudes toward cervical cancer prevention through effective health promotion.

Keywords: cervical cancer; women of childbearing age; VIA test; knowledge; attitudes; willingness; behavior

INTRODUCTION

Cervical cancer remains one of the leading causes of death worldwide, with nearly 20 million new cases and over 9.7 million deaths recorded in 2022.¹ Asia accounts for almost half of all cases and over half of the deaths, with cervical cancer ranking among the top cancers affecting

women, particularly in resource-limited countries like Indonesia. The high cervical cancer morbidity and mortality in developing nations are largely due to ineffective early detection efforts. The majority of cervical cancer cases, caused by Human Papillomavirus (HPV), could be

prevented through improved screening and vaccination efforts.^{1,2}

In Indonesia, the Ministry of Health has promoted early detection initiatives for cervical cancer, including using of Visual Inspection with Acetic Acid (VIA) as a safe, affordable, and accessible screening method.³ Despite this, VIA coverage in Indonesia is still low, with only 7.02% of the 2023 screening target achieved nationally and only 6.8% in Jambi Province.⁴ The Kenali Besar Health Center in Jambi City, which serves a large population of women of reproductive age (WRA), saw only 5.7% of women screened in 2023 against a target of 70%.⁵

The Theory of Planned Behavior by Ajzen helps explain this discrepancy, asserting that an individual's behavior depends on their intention or willingness to act, which in turn is influenced by three factors: *attitude toward the behavior*, *subjective norm*, and *perceived behavioral control*. According to this theory, individuals are more likely to engage in health behaviors, like screening, if they believe it will lead to a valued outcome, if they feel social pressure to do so, and if they believe they have the resources and opportunities to perform the behavior.^{6,7}

Additionally, the Health Belief Model highlights how individual's perceptions of susceptibility to disease, its severity, and the benefits of preventive actions influence their health behavior. Those who feel more vulnerable and recognize the severe consequences of cervical cancer are more

likely to seek prevention measures, including VIA screening.⁷

Previous studies suggest that women's knowledge and attitudes toward cervical cancer screening are closely linked to their willingness to undergo VIA screening. Research by Nurtini et al. (2017) found most WCA at and Didik et al. (2021) found that a higher level of knowledge and a good attitude toward cervical cancer prevention led to an increased willingness to undergo screening.

Given the significant gap in screening coverage at the Kenali Besar Public Health Center, this study aims to describe the levels of knowledge of cervical cancer, attitudes toward prevention, and the willingness to undergo VIA examination among married WCA at Kenali Besar Public Health Center. The result of this research is essential for promoting interventions to improve VIA coverage in Jambi City. The findings provide an evaluation for cervical cancer prevention efforts at the Kenali Besar Health Center, helping to refine health promotion program and improve public health outreach.

METHODS

This study used an observational analytic method with a cross-sectional design. The research was conducted at the Kenali Besar Public Health Center in Jambi City due to the largest population of WCA in Jambi City but a relatively low IVA screening coverage rate compared to other public health centers in the city. The

population for this study consisted of married WCA who visited the Kenali Besar Public Health Center.

The sample was drawn from this population based on specific inclusion such as married WCA, and willing to participate in this study that asked during informed consent. Otherwise, the exclusion criteria include WCA who have been diagnosed with cervical cancer and who have undergone a hysterectomy.

The data for this study was collected in June-July 2024 using questionnaires that covered 3 domains ; knowledge of cervical cancer, attitudes toward cervical

cancer prevention, and willingness to undergo VIA screening.

The collected data was analyzed using descriptive statistics to summarize the characteristics of the respondents, their knowledge, attitudes, and willingness to undergo IVA screening.

RESULTS

The Characteristics of Married WCA

In this study, we obtained 110 samples of married WCA in Kenali Besar Public Health Center. **Table 1** shows the characteristics of these study participants.

Table 1. Distribution of married wca characteristics at Kenali Besar Public Health Center based on age, education, and employment status

Variable	Frequency (n=110)	Percentage (%)
Age		
Late Adolescence (17-25 years)	15	13.6
Early Adulthood (26-35 years)	58	52.7
Late Adulthood (36-45 years)	37	33.6
Education Level		
Primary Education	14	12.7
Secondary Education	56	50.9
Higher Education	40	36.4
Employment Status		
Unemployed	65	59.1
Employed	45	40.9

Based on the frequency distribution in **Table 1**, the characteristics of married WCA are classified by age, education, and employment status. In terms of age, most WCA at the Kenali Besar Public Health Center in Jambi City falls within the early

adult category, specifically in the age range of 26-35 years.

Knowledge of Cervical Cancer

Table 2 shows the distribution of knowledge of these study participants.

From the frequency distribution, the majority respondents' knowledge levels of

cervical cancer are categorized as sufficient.

Table 2. Distribution of Knowledge on Cervical Cancer among Married WCA at Kenali Besar Public Health Center

Knowledge of Cervical Cancer	Frequency (n=110)	Percentage (%)
Poor	35	31.8
Sufficient	44	40.0
Good	31	28.2

Attitudes Toward Cervical Cancer Prevention

The frequency distribution in **Table 3** indicates that more than half (51.8%) of

WCA at the Kenali Besar Public Health Center had a moderate attitude toward cervical cancer prevention.

Table 3. Distribution of Attitudes Toward Cervical Cancer Prevention among Married WCA at Kenali Besar Public Health Center

Attitudes Toward Cervical Cancer Prevention	Frequency (n=110)	Percentage (%)
Very poor	0	0
Poor	3	2.7
Moderate	57	51.8
Good	42	38.2
Very Good	8	7.3

Willingness to Undergo VIA Examination

Table 4 shows the distribution of willingness to undergo VIA from these study participants. Based on the frequency

distribution, it was found that 47.3% of WCA at Kenali Besar Public Health Center had a low willingness to undergo VIA screening.

Table 4. Distribution of Willingness to Undergo VIA Examination among Married WCA at Kenali Besar Public Health Center

Willingness to Undergo VIA	Frequency (n=110)	Percentage (%)
Low	52	47.3
Moderate	36	32.7
High	22	20.0

Table 5 further supports this finding, as only 10 out of 110 respondents

at Kenali Besar Health Center in Jambi City had ever participated in VIA screening.

Table 5. Distribution of Married WCA at Kenali Besar Public Health Center based on VIA Screening Status

VIA Screening Status	Frequency (n=110)	Percentage (%)
Ever Had VIA	10	9.1
Never Had VIA	100	90.9

The most frequent reason for not undergoing VIA, as shown in **Table 6**, is the belief that the absence of symptoms negates the need for screening. This misconception likely results from a lack of knowledge

regarding the asymptomatic nature of early-stage cervical cancer, as most cases are only identified at more advanced-stages.

Table 6. Reasons for Not Undergoing VIA Screening among Married WCA at Kenali Besar Public Health Center

Reason for Not Undergoing VIA	Frequency (n=100)	Percentage (%)
Absence of symptoms	25	22.7
Lack of knowledge about VIA tests and cervical cancer	23	20.9
Embarrassed about the examination	17	15.5
Painful procedure	14	14.0
Lack of time for screening	13	13.0
Already had a Pap smear	3	3.0
VIA test is not considered important	3	3.0
Fear of the results	2	2.0

Regarding the few WCA undergoing VIA screening, adherence to recommended rescreening intervals remains low. According to **Table 7**, among the 10 women who had participated, 7 women had been screened only once, while 3 women had done twice within a 1-2 year span, and all of them had negative results. The Ministry of Health’s 2015 guidelines recommend that WCA with a

negative VIA result should ideally repeat screening every three years, while those with positive results should be screened annually. Increased awareness of these guidelines may help improve compliance and contribute to achieving adequate screening coverage and early detection.

Table 7. Frequency and Results of VIA Screening among WCA at Kenali Besar Public Health Center

Variable	Frequency (n=10)	Percentage (%)
Frequency of VIA		
1 time	7	70.0
2 times	3	30.0
Results of VIA		
Negative	10	100.0
Positive	0	0.0

DISCUSSION

The Characteristics of Married WCA

In terms of age, most WCA at the Kenali Besar Public Health Center in Jambi City falls within the early adult category, specifically in the age range of 26-35 years. This finding aligns with the demographic profile of WCA respondents in Denpasar, Bali, as shown in Winata et al.'s 2023 study, where the majority were also in the early adult category, with a median age of 33 years⁸. In contrast, Hardiyanti et al.'s 2020 study in Jakarta reported a younger age range, with the majority of WRA respondents between 20-30 years.⁹

According to education levels, the majority of WCA in Kenali Besar had achieved secondary education, specifically high school. This implies that most WCA had completed the government-mandated 12-year education program. Similar education levels were observed in Christy et al.'s 2021 study in Bitung Barat, where the majority of WCA respondents also completed high school.¹⁰ However, Yunida et al.'s 2021 research in Pangaribuan,

North Tapanuli, showed a different profile, with most WCA respondents having only primary school (SD) education.¹¹ Additionally, Hardiyanti et al.'s 2020 study indicated that the majority of WCA respondents in Jakarta had higher educational attainment, with a college degree (S1). This difference could be due to the research location, as Hardiyanti's study focused on female employees in a corporate setting in Jakarta.⁹

Most WCA in Kenali Besar did not hold formal employment positions but continued to fulfill roles as housewives. Fauza et al.'s 2019 study similarly found that most WRA respondents in Padang City were unemployed.¹² Alifina et al. also reported similar findings in their research at the Surabaya City Public Health Center, where most WRA respondents were not formally employed.¹³ Conversely, Winata et al.'s study in Denpasar showed that more than half of WCA respondents were formally employed.⁸

The age, education, and employment characteristics of WCA in Kenali Besar reveal trends and variations that may

impact their health awareness, particularly regarding cervical cancer prevention. The majority within the early adult age range (26-35 years) aligns with an age demographic that is more likely to engage in preventive health behaviors. However, educational attainment, predominantly at the high school level, suggests that additional health education may be beneficial to increase awareness and willingness toward cervical cancer screening, such as Visual Inspection with Acetic Acid (VIA). Employment status, where most WCA are not formally employed, indicates they may have time availability but possibly limited health literacy due to their role as housewives.

Knowledge of Cervical Cancer

the majority respondents' knowledge levels of cervical cancer are categorized as sufficient. This percentage reflects that nearly half of the women have a foundational understanding of cervical cancer, covering topics such as definition, etiology, risk factors, symptoms, pathogenesis, prevention, and early detection. However, this level of knowledge does not significantly surpass the "poor" knowledge category, which represents 31.8% of the respondents. This finding indicates that knowledge about cervical cancer among WCA at Kenali Besar remains unevenly distributed. A closer look into the survey responses reveals specific gaps in knowledge: 79.3% of WCA were unaware that the use of vaginal cleansers

can be a risk factor, 66.7% did not know that HPV vaccination serves as a preventive measure for cervical cancer, and 58.2% lacked knowledge about cervical cancer transmission. The data indicate that existing health promotion initiatives concerning cervical cancer and early detection methods, such as Visual Inspection with Acetic Acid (VIA), may not be fully optimized. Additionally, it has been observed that 54.1% of respondents remain unaware that VIA screenings are offered at various health services beyond hospitals, including public health centers and clinics.

According to Notoatmodjo, knowledge is influenced by both internal and external factors. Internal factors include age, intelligence, experience, and interest, while external factors encompass education, environment, occupation, sources of information, and socioeconomic status.^{14,15} In this study, the majority of respondents from the WCA are within the early adult age range of 26 to 35 years. This demographic is typically associated with the greater life experience and a more developed worldview. According to Hurlock's human development theory, this stage of development is likely to correlate with a balanced level of cognitive maturity and knowledge. This is reflected in the predominantly moderate knowledge levels observed among the participants.¹⁶

The educational level of most respondents (high school level) implies that they have completed the 12-year

compulsory education mandated by Indonesia's Ministry of Education and Culture, equipping them with a base level of academic and non-academic experiences that contribute to their understanding of health topics, such as cervical cancer. Access to information also plays a role in forming the respondents' knowledge levels. The availability and ease of access to information on cervical cancer increases awareness, with more information correlating with increased knowledge.

In summary, while WCA at Kenali Besar have a sufficient understanding of cervical cancer, there are still gaps in their knowledge regarding specific prevention methods and risk factors. This highlights the need for more targeted health promotion. Enhancing health education through accessible sources, such as community health centers, can help bridge these knowledge gaps. This approach would foster a more comprehensive understanding of cervical cancer prevention and early detection among women in the community.

Attitudes Toward Cervical Cancer Prevention

The finding reflects a supportive response among WCA regarding awareness, belief, and caution toward cervical cancer and its preventive measures. A moderately positive attitude also suggests that respondents have received adequate stimulation or

information, potentially influenced by personal experiences or knowledge of cervical cancer.

However, despite this moderate attitude, several negative responses were observed in specific statement. A significant portion of respondents reported never seeking information about cervical cancer prevention (39.4%), never attending screenings for reproductive organ health (40.9%), and not receiving the HPV vaccine (70.9%). Additionally, 37.3% agreed with the statement that they feel healthy and do not need a VIA test. These results highlight persistent negative attitudes or misunderstandings about cervical cancer and preventive practices among the respondents.

Similar results were found in a study conducted in the Philippines by Imoto et al. (2020), which stated that 35.2% of the 250 respondents had a moderate attitude toward cervical cancer and cervical cancer screening.¹⁷ However, this contrasts with a study by Winata et al. (2023) in Denpasar, Bali, where 54% of respondents exhibited good attitudes, and another by Nurfitriani (2019) in Putri Ayu Health Center, Jambi, where 53.3% of WRA had good attitudes.^{8,18} Conversely, Naufal Fikri Ismail et al. found that 57% of respondents had poor attitudes toward early cervical cancer detection.¹⁹

According to Azwar, attitudes are a closed response to a stimulus and a predisposition for behavior. Several factors influence attitude formation, including

personal experiences, the influence of significant others, culture, education, mass media, and emotional factors.²⁰ **Personal Experience:** Respondents' experiences with cervical cancer or reproductive health issues play a crucial role in forming their attitudes. Individuals with specific experiences related to cervical cancer or reproductive health are exposed to strong stimuli, which may influence the development of adequate attitudes, whether positive or negative. **Influence of Significant Others:** The presence of influential individuals, such as family members or community leaders, can significantly impact an individual's perception of cervical cancer, vaccination, and VIA screening. Positive reinforcement from trusted figures may foster sufficient attitudes, while stigma or misinformation could affect to hesitation or inconsistency. **Mass Media:** Mass media plays a crucial role in shaping public attitudes toward cervical cancer and its prevention. Informative campaigns are highly effective in increasing awareness and fostering positive perceptions regarding cervical cancer and screening methods, such as visual inspection with acetic acid (VIA). Conversely, misleading or inconsistent reporting about cancer, vaccines, or medical personnel can lead to distrust and inconsistency in attitudes toward preventive measures.

While most WCA at Kenali Besar Health Center demonstrate moderately positive attitudes toward cervical cancer

prevention, there is the gap for improvement, especially in addressing negative attitudes and misconception. Public health efforts should prioritize raising awareness through trusted information sources, combating stigma, and effectively using mass media to foster positive attitudes toward cervical cancer prevention and early detection.

Willingness to Undergo VIA Examination

Based on the frequency distribution in **Table 4**, it was found that 47.3% of WCA at Kenali Besar Public Health Center had a low willingness to undergo VIA screening. This indicates the low participation, willingness, and readiness among WCA to engage in early cervical cancer detection through this VIA method.

Additional reasons provided by respondents included lack of knowledge about the VIA test and cervical cancer, feelings of embarrassment about the examination, perception of painful procedure, lack of time, having already undergone a Pap smear, and a perception that the VIA test was unnecessary. Notably, 20.9% of respondents cited unfamiliarity with the VIA test and cervical cancer as a significant factor. This is supported by the generally low knowledge levels observed, with only 28.2% of respondents demonstrating "good" knowledge. Even among respondents aware of cervical cancer and the VIA test, 15.5% chose to not undergo screening due

to embarrassment and 14% due to concerns over procedural pain. These responses may reflect low self-confidence and distrust toward healthcare providers, especially as the procedure requires a high level of personal exposure, causing fear among some respondents. This aligns with Green's theory, which suggests that an individual's belief in healthcare providers and self-efficacy significantly influences their actions.¹⁴

Some respondents reported that they did not have enough time for the test or believed that visual inspection with acetic acid (VIA) was unimportant. This suggests a lack of societal awareness about cervical cancer and VIA screening, which may stem from insufficient health promotion efforts. Many respondents appeared to perceive health issues as the sole responsibility of the government or institutions, rather than as individual responsibilities. Some indicated that their time was consumed with work or managing household duties, which may explain why 40.9% of employed respondents did not prioritize VIA screening.

A study conducted by Chandrika on women in Pondicherry, India, also revealed that only 32% of 219 women expressed a willingness to undergo cervical cancer screening.²¹ The findings of this study differ from the research conducted by Hassan et al. (2018), which reported that women of childbearing age (WCA) in Jatinangor demonstrated a high willingness to undergo cervical cancer screening and to

receive cervical cancer information. Additionally, nearly all respondents in their study expressed acceptance of VIA screening as a future cervical cancer screening method.²²

This variation in willingness to undergo VIA screening may come from several factors, such as individual attitudes toward potential outcomes of the behavior, perceived social expectations, and accessibility. These factors are also influenced by individuals' knowledge of the importance and benefits of VIA screening. This highlights the need to address barriers in knowledge, attitudes, and access to improve participation in VIA screening programs.

Similarly, research by Christy Hanudji et al. in 2021 found that more than half (64.83%) of WCA at Bitung Barat Health Center in Bitung City did not participate in VIA screening.¹⁰ These consistent results align with Jambi City Health Office data, which show that the VIA screening coverage remains low at only 9.1%, far from the target of 70%.⁵ The reasons WCA have not undergone cervical cancer screening were also highlighted in Chandrika's 2022 study in India, which found that fear and the absence of symptoms were the main factors behind their lack of willingness. In contrast, various reasons for not undergoing VIA screening were identified in other studies.²¹ Aprianti et al. discovered that 68.1% of WCA in Padang did not participate in VIA screening due to a lack of knowledge and uncertainty

about the benefits of the test.¹² Similarly, research conducted by Sahr et al. revealed that WCA at the Sukoharjo Health Center in Surakarta primarily cited insufficient information about the VIA test as their reason for not participating.²³

CONCLUSION

The characteristics of WCA at Kenali Besar Health Center in Jambi City are dominated by early adulthood (52.7%), secondary education (50.9%), and unemployed status (59.1%). The level of knowledge about cervical cancer among WUS at Kenali Besar Public Health Center is sufficient (40%). The attitudes of WCA toward cervical cancer prevention are adequately positive, with 51.8% in the “moderate” category. The willingness to undergo VIA screening among WCA is low (47.3%). Most WCA has not undergone VIA screening, primarily due to the absence of symptoms (22.7%). Among those who have, 70% have done it only once, and all had negative VIA results (100%).

RECOMMENDATIONS

Kenali Besar Public Health Center should improve health promotion program to raise awareness about cervical cancer risks, the high morbidity and mortality rates, and the importance of early detection. The strategy are considering community-based outreach and social media platforms, extending these efforts to WUS families and young women. This should help increase VIA screening coverage at the health center. WCA could enhance awareness of the importance of early cervical cancer detection through IVA by seeking reliable information via the internet, social media, and health center counseling. Those who haven't undergone IVA screening are encouraged to do so, overcoming fear or embarrassment, as this test is essential for early detection. Women who have completed IVA screening are encouraged to support others in taking this preventive measure. Future researchers may consider exploring additional factors, such as family support, personal experience, and information access, through qualitative or quasi-experimental methods to gain a comprehensive understanding of the barriers to IVA screening behavior.

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