RESEARCH ARTICLE

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Correlation between Knowledge, Attitude, and Partner Support Towards Visual Inspection with Acetic Acid Test among Women in Denpasar City, Indonesia

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Abstract

Background: Cervical cancer is the fourth most common cancer in women worldwide. Thus a high mortality rate is unavoidable. Visual Inspection with Acetic Acid (VIA) is a practical and inexpensive screening test for detecting cervical cancer. We aim to show the association between knowledge, attitude, and partner support towards VIA practice in women in Denpasar, Bali. **Methods:** The study design was a cross-sectional and analytical observational study conducted at the Public Health Center Denpasar in July-August 2022. The respondents consisted of 90 child-bearing-age women who met the inclusion criteria. The questionnaire consisted of informed consent, demographic characteristics (26 questions), knowledge (20 questions), attitude (22 questions), partner support (11 questions), and practice of VIA (2 questions). The data analysis used the Chi-square test using SPSS ver26. **Results:** The median age of all respondents was 33 (10) years. The majority of respondents were monogamous (93.03%), had no history of miscarriage (80%), used contraception (56.07%), and the mean age of first sexual intercourse was 20.6 years. Up to 69 women (76.7%) had the VIA Test in the past five years, and 42 women (46.7%) took the test regularly every three years. There is a correlation between knowledge ($p=0.001$, $r=0.334$), attitude ($p<0.001$, $r=0.367$), and partner supports ($p=0.03$, $r=0.197$) toward practicing VIA. **Conclusion:** The practice of VIA is influenced by the level of knowledge, attitudes, and partner support of the child-bearing-age women in Denpasar. All healthcare professionals and the environment should support and encourage women to perform VIA regularly.

Keywords: Cervical cancer- knowledge- attitude- practice- visual inspection with acetic acid

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Introduction

Cervical cancer is among the most preventable cancers and can be detected easily. However, it still occupies the fourth most common cancer among women worldwide, ranking only behind breast cancer (2.1 million cases), colorectal cancer (0.8 million), and lung cancer (0.7 million cases). There were 311,000 mortality and over 570,000 new cases of cervical cancer in 2018. There were significant regional differences in the estimated age-related incidence of cervical cancer, which was 13.1 per 100,000 women worldwide. The average age at cervical cancer diagnosis worldwide was 53 years, and the average age at death was 59. In 2022, 90% of new cases and fatalities of cervical cancer came from low to middle-income countries (Buskwofie, David-West and Clare, 2020; World Health Organization, 2022). In Indonesia, cervical cancer ranks second in most cancer cases, with the number reaching 36.633, or equivalent to 9.2% of the total cancer cases in 2020. The incidence of cervical cancer in Indonesia peaks in the age group 45-54 years (32.40%) and the age group 35-45 years (31.40%) (Direktorat et al., 2022). Based on data in 2019, the incidence of cervical cancer in Bali was 437 cases, and in Denpasar itself was 293 cases (Pratiwi, 2022).

Human Papilloma Virus (HPV) infections are the main cause of cervical cancer. The International Agency for Research on Cancer has classified 12 of the 200 HPV varieties found as carcinogenic, with HPV-16 responsible for 50% and HPV-18 responsible for 10% of cervical cancer cases. Compared to a person who is not infected, the chance of developing cancer is increased by 435 and 248 times, respectively, by infection with one of these two HPV strains. In 99.7% of cervical cancer patients globally, persistent viral infection with high-risk HPV genotypes is the underlying cause of the disease. About 80% of women will contract HPV at some point in their lifetime, many by age 45. HPV infection is sexually transmitted. Because HPV infection is asymptomatic, it may take 10 to 15 years for alterations in the cervix to become apparent. HPV infection is frequently contracted during adolescence and the early stages of adulthood. Cervical cancer rates have

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reduced by 1% to 1.9% annually since the introduction of HPV vaccinations, indicating that prevention is a key component of managing cervical cancer (Johnson et al., 2019).

Early detection is a compelling way to decrease cervical cancer's burden and mortality. The easiest, fastest, and cheapest screening test available at primary care is the Visual Inspection with Acetic Acid (VIA). The VIA test is carried out by observing the color change on the cervix after rubbing the acetic acid solution and Lugol's solution with a cotton swab. The findings from VIA are positive precancerous lesions if the cervix has a white area raised surface and clear boundaries around the transformation zone or squamocolumnar edge (Sulaini and Edison, 2017).

Currently, in Indonesia, the VIA method has been proclaimed free of charge for women of reproductive age (WRA), namely women aged 15-49 years or women who have had sexual intercourse, yet from the study, early detection for cervical cancer in Indonesia since 2008-2016 is still low, around 4.34% or 1,623,913 people using the VIA method from a total target of 37.5 million women. In 2020, in Bali, the coverage of WRA conducting VIA tests was 4.1%. This low coverage must be evaluated to increase awareness of early detection (Dinas et al., 2021).

Low public cancer awareness leads to low early detection rates, especially among women (Kementerian et al., 2016). Many factors influence a person's behavior for early detection of cervical cancer. Predisposing factors, such as knowledge, attitudes, beliefs, and values, form behavioral factors. Other factors are supporting factors such as the availability of health facilities. Other driving factors are attitudes and behavior of health workers or other officers, family support, and the patient surrounding environment (Mading et al., 2022). A study conducted in 2012 found that the main reason for the low coverage of VIA examinations in Bali was the inadequate knowledge and motivation of WRA regarding the IVA test (Suarnitiet al., 2012). There is very limited study on the risk factors that correlate with the low coverage of IVA tests in Denpasar and the importance of evaluating the causes of these problems so that efforts can be made to increase WRA awareness of early detection of cervical cancer. The main objective of this study was to determine the relationship between knowledge, attitudes, and partner support towards the behavior of early detection of cervical cancer with VIA among visitors at public health centers in Denpasar City.

Materials and Methods

This study was conducted at Public Health Center in Denpasar City from July to August 2022. The design for this study was cross-sectional with an analytical observational study. Respondents of this study consisted of 90 women of reproductive age. All women aged 15-49 who came to Public Health Center in Denpasar City during this study period were included. We used a questionnaire as the study instrument. The questionnaire used in this study is a questionnaire from previous research that has been tested for its validity. The research instrument used a questionnaire containing informed consent, demographic data, 20 knowledge questions, 22 attitude questions, 11 about husband support, and two about VIA behavior. We accumulated the scores for each section. We divided the level of knowledge into two categories: Good (>80%) and Poor (<80). Attitudes are grouped into two categories, good (>71) and bad (<71), based on the median score. Husband's support is grouped into two categories; support (7-11) and not support (<7). In the last five years of detection behavior, they included yes and no. General respondents' characteristics such as age, education status, occupation, income, marital history, age of first-time sexual intercourse, number of children, miscarriage, smoking habit, and the use of birth control were also recorded as study variables. Data analysis uses the IBM SPSS Statistics 26 application and the Chi-square test for univariate and bivariate tests.

This study has been approved by the Faculty of Medicine Ethics Committee, Udayana University/Prof. dr. I.G.N.G. Ngoerah General Hospital in Denpasar with reference number 2223/UN14.2.2.VII.14/LT/2022.

Results

Table 1 shows the essential characteristics of the study population for 90 respondents. From this distribution, it was found that most of the respondents were 33 years old, had a high school education (46.7%), worked (63.3%) with an income of IDR 1,500,000 – 3,000,000 (43.3%), had a marital history one time (93.3%), age of first sexual intercourse are over 20 years old (56.4%) with two children (53.3%), no history of miscarriage (80.0%), using birth control (56.7%) and not smoking (90%).

Thus, from the Table, it can be concluded that there is a statistically significant relationship between the level of knowledge on VIA detection behavior over the last five years with a p=0.001 and a correlation value of 0.334 which indicates a positive correlation with moderate correlation strength and clinically significant. The relationship between a good attitude towards VIA detection behavior in the last five years obtained a p-value <0.001 and a correlation value of 0.367 which indicates that the correlation between good attitude and VIA detection behavior over the previous five years is statistically significant and shows a positive correlation with moderate correlation strength and clinically meaningful. Meanwhile, the husband's support for VIA detection behavior in the last five years has a p-value = 0.01 and a correlation value of 0.266, which illustrates a statistically significant correlation and a positive correlation with a low correlation and not clinically significant.

There is a correlation between the level of knowledge of VIA detection behavior every three years with a p = 0.001 and a correlation value of 0.334 that there is a statistically significant correlation and a positive correlation with moderate correlation strength and clinically effective. The correlation between attitude and routine detection behavior obtained a value of p=0.011 and a correlation value of 0.258, with the interpretation of a statistically significant correlation but not clinically with a low correlation strength. Meanwhile, the relationship between

Table 1. Basic Characteristics of the Research Subject

Characteristics	Health center visitors n (%) (n=90)
Age	
Median (IQR)	33 (10)
Education	
Junior High School	15 (16.7)
Senior High School	42 (46.7)
College	33 (36.7)
Occupation	
Working	57 (63.3)
Housewife	33 (36.7)
Income	
<1,500,000	33 (36.7)
1,500,000 – 3,000,000	39 (43.3)
>3,000,000	18 (20.0)
Marital History	
One time	84 (93.3)
> 2 times	6 (6.70)
Age of First-Time Sex	
<20 years	32 (35.6)
> 20 years	58 (54.4)
Number of children	
No children	3 (3.3)
One child	6 (6.7)
Two children	48 (53.3)
Three children	33 (36.7)
Miscarriage	
Never	72 (80.0)
One time	15 (16.7)
> 2 times	3 (3.3)
Smoke	
Yes	9 (10)
No	81 (90)
Use of birth control	
Yes	51 (56.7)
No	39 (43.3)

the husband's support and normal VIA detection behavior shows a p-value = 0.057 and a correlation value of 0.197, which means a statistical correlation. The strength of the correlation is low and not clinically significant.

Discussion

Knowledge is important for someone to do something like check themselves to detect early whether they have a risk of cervical cancer; of course, it will be difficult for someone to want to get tested if they don't have good knowledge of the VIA examination. So that it can be concluded that in this study, there were 90 samples, of which 54 samples had good knowledge; among the 54 samples there were 48 samples carried out early detection, namely 88.9%, while there were 6 samples that did not carry out early detection, namely 11.1%, likewise, in the sample who had low knowledge, where 36 samples had low knowledge, 21 samples with low knowledge checking themselves for VIA detection, and 15 samples not checking themselves. From this, of course, it can be seen that even though 36 samples had low knowledge, 21 samples, or 41.7%, checked themselves, while 15 samples or 34.6%, did not have themselves checked. From this, it is seen that there is still a preponderance of samples who checked themselves even though their knowledge was low. As expressed by Notoatmojo et al., (2012) that knowledge can be gained from experience derived from various sources of information to form a belief for a person. So that to increase public knowledge about IVA examinations, it is necessary to socialize about IVA can be received through television, radio, magazines, and cadres of health workers in the community. This study aligns with research by Adyani and Realita, (2020) health center, which shows that 198 respondents who did not follow the IVA test had poor knowledge of the early detection of cervical cancer (83.9%). The distribution of respondents according to their education level showed that 115 (96.6%) respondents with low education (SD / SMP) did not take the IVA test.

However, what can also be of concern is the increase in the number of samples who did not check themselves, namely as many as 15 samples or 34.6%, this increased

Table 2. The Relationship between Knowledge, Attitude, and Husband's Support toward the Behavior of Early Detection of Cervical Cancer in the Last Five Years.

Variables	Behavior Detection in the Last 5 Years				
	Yes	No	Total	P	r
Knowledge level				0.001	0.334
High (85-100)	48 (88.9%)	6 (11.1%)	54 (100%)		
Low (<85)	21 (41.7%)	15 (34.6%)	36 (100%)		
Attitude				<0.001	0.367
Well	42 (93.3%)	3 (6.7%)	45 (100%)		
Bad	27 (60.0%)	18 (40.0%)	45 (100%)		
Husband Support				0.01	0.266
Support	51 (70.8%)	21 (29.2%)	72 (100%)		
Does not support	18 (100%)	0	18 (100%)		
Total	69 (76.7%)	21 (23.3.6%)	90 (100%)		

* P , significant value; r, correlation value

Table 3. The Results of the Partner's Knowledge, Attitudes, and Support Level for VIA Detection Behavior Every Three Years.

Variables	Routine Detection Behavior Every 3 Years				
	Yes	No	Total	P	r
Knowledge level				0.001	0.334
High (85-100)	48 (88.9%)	6 (11.1%)	54 (100%)		
Low (<85)	21 (41.7%)	15 (34.6%)	36 (100%)		
Attitude				0.011	0.258
Well	42 (93.3%)	3 (6.7%)	45 (100%)		
Bad	27 (60.0%)	18 (40.0%)	45 (100%)		
Husband Support				0.057	0.197
Support	51 (70.8%)	21 (29.2%)	72 (100%)		
Does not support	18 (100%)	0	18 (100%)		
Total	69 (76.7%)	21 (23.3.6%)	90 (100%)		

* P, significant value; r, correlation value

dramatically from 11.6% to 34.6%, and the decrease in the number of samples who checked themselves, namely from 88.9% decreased to 41.7% due to lack of knowledge. Based on the analysis results, there is a relationship between knowledge and early detection with the VIA method in WRA in the Denpasar Health Center. The results of this study are similar to Dewi et al., (2021)'s research, which found a significant relationship between knowledge and the behavior of WRA in checking VIA. The proportion of WRA who did VIA examinations in the last five years was found to be more in WRA with good knowledge of 48 (88.9%), while the proportion of WRA who did not have VIA examination was more in WRA who had less knowledge, at 15 (34.6%). The results of this study are in line with Wulandari et al., (2017)'s research, namely that there is a significant relationship between the level of knowledge of cervical cancer and VIA examination behavior with a p-value = 0.027 <0.05.

Of course, everyone has a different attitude in responding to something. This study assessed all samples' attitudes toward cervical cancer and VIA examination. From the questionnaire given to 90 samples, it was found that 45 people had a good attitude or were in line with things that support early detection of cervical cancer. In comparison, 45 samples had a bad or bad attitude towards something related to early detection of cervical cancer. So that it can be concluded that in this study related to attitude, there were 90 samples, of which 45 samples had a good attitude; among the 45 samples, there were 42 samples that carried out early detection, namely 93.3%, while there were 3 samples that did not carry out early detection, namely 6.7%. Likewise, in the samples with a bad attitude, where 45 samples had a bad attitude, 27 samples with this bad attitude checked themselves for detection of VIA, and 45 samples did not check themselves. From this, of course, it can be seen that even though 36 samples had a bad attitude, 21 samples or 60% checked themselves, while 18 samples or 40%, did not have a check-up. From this, it was seen that there were still more dominant samples that contained themselves even though their attitude was bad. But what can also be of concern is the increase in the number of samples who did not check themselves, namely as many as 18 samples or 40%, this increased drastically from 6.7% to 40%, and the decrease in the number of samples who checked themselves, namely from 93.3% decreased to 60% because they had a bad attitude. Based on the analysis result, there is a relationship between attitude and early detection by the VIA method for WRA in the Denpasar Health Center. In line with a study conducted by Handayani (2018) in 2017, there was a significant relationship between attitudes and early detection behavior with the VIA method for WRA in the village of Menyak, Koba sub-district, Central Bangka district with a value of $\rho = 0.000$. This study found that a mother who had not to support attitude had a 7.367 times greater risk of not having a VIA examination than those with a supportive attitude.

Partner support for his wife certainly has an important role in carrying out a VIA examination on a woman. Because, after all, the husband is someone who is closest to the wife and wants the best for his wife. However, in this study, where there were 90 samples, all of whom had husbands, 72 samples received husband support, and of these 72 samples, 51 samples, or the equivalent of 70.8%, carried out VIA examinations. In comparison, 21 samples who received husband support did not perform VIA or around 29%; this is in contrast to the sample which did not receive husband support 18 samples, of which all 18 samples or 100%, had VIA checked on themselves. The sample has good knowledge and attitude, so they continue to carry out VIA examinations, or because of many other factors. Based on the results of the analysis, that a relation between the husband's support and early detection by the VIA method for WRA in the Denpasar Health Center. The results of this study based on Yuliwati et al., (2012)'s research show a significant relation between husband or family support and VIA examination behavior with a value of p=0.000, which shows that it greatly influences their health status. The results of this study contradict those conducted by Adyani and Realita, (2020) health center, who found that of those whose families were poor support, 99.5% did not attend the IVA examination, while for those whose families supported, 75.0 percent did not

follow the IVA examination.

The objectives of our study are twofold. Firstly, we aim to assess women's knowledge level in Denpasar regarding VIA and its role in cervical cancer screening. This will involve evaluating their awareness of VIA as a screening method, its benefits, and potential risks. Secondly, we intend to explore women's attitudes towards VIA and understand their perceptions, beliefs, and motivations about this screening test. Additionally, we will investigate the impact of partner support on women's decision to undergo VIA, as social support plays a crucial role in shaping health behaviors.

By conducting this study, we hope to provide valuable insights into the factors influencing the practice of VIA among child-bearing-age women in Denpasar. Our findings will demonstrate a positive correlation between knowledge, attitudes, and partner support toward VIA practice. This knowledge can then be utilized to develop targeted interventions and educational programs to improve VIA uptake among women in the community.

In conclusion, age, knowledge, attitude, and VIA test examination have a significant relationship. A significant relation had been found between the husband's support and the VIA test, but not clinically significant. Most respondents had taken a VIA test but had not done it regularly. Most respondents have secondary education, good knowledge, and easy access to Primary Health Centres to get support from their husbands. The factor that has the most influence on the examination of the VIA test is the level of knowledge.

Author Contribution Statement

All authors contributed equally to this research from the conceptual framework, data gathering, and analysis until the final report's interpretation of the results.

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Ethical Clearance

This study has obtained ethics approval from The Ethics Committee, Faculty of Medicine, Udayana University, Denpasar, Bali, Indonesia, with reference number 2223/UN14.2.2.VII.14/LT/2022.

Conflict of Interest

The authors declare that there is no competing interest regarding the publication of this article.

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