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The Relationship between Knowledge of Cervical Cancer and the Motivation of Women of Reproductive Age to Undergo Visual Inspection with Acetic Acid (VIA) at the Payangan Community Health Cente

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Abstract . Cervical cancer remains a major public health problem and is one of the leading causes of cancer-related mortality among women in Indonesia. Early detection through Visual Inspection with Acetic Acid (VIA) is an effective and feasible screening method at the primary health care level. However, the coverage of VIA screening among women of reproductive age (WRA) remains low. Knowledge is considered an important predisposing factor that may influence women's motivation to undergo VIA screening. This study aimed to analyze the association between cervical cancer knowledge and motivation to undergo VIA screening among women of reproductive age. This study employed a quantitative analytic design with a cross-sectional approach. A total of 105 women of reproductive age were recruited using consecutive sampling at the Payangan Community Health Center, Gianyar Regency, Indonesia. Data were collected using validated and reliable structured questionnaires measuring cervical cancer knowledge and motivation to undergo VIA screening. Univariate analysis was performed to describe respondent characteristics, while bivariate analysis using the chi-square test was applied to examine the association between knowledge and motivation at a significance level of 5%. The results showed that 61.9% of respondents had good knowledge of cervical cancer, while 52.4% demonstrated low motivation to undergo VIA screening. A statistically significant association was found between cervical cancer knowledge and motivation to undergo VIA screening ($p = 0.043$). Women with higher levels of knowledge tend to have greater motivation to participate in VIA screening. In conclusion, cervical cancer knowledge is significantly associated with motivation to undergo VIA screening among women of reproductive age. These findings suggest that strengthening health education interventions at primary health care facilities is essential to enhance motivation and increase participation in early cervical cancer detection programs.

Keywords : Cervical cancer; Knowledge; Motivation; Visual Inspection with Acetic Acid (VIA)

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1. BACKGROUND

Cervical cancer is a major health problem for women and ranks fourth among causes of cancer deaths globally (World Health Organization, 2020). In Indonesia, cervical cancer remains a significant public health burden. Data from the Indonesian Ministry of Health shows that the incidence of cervical cancer reaches 23.4 per 100,000 women, with a mortality rate of 13.9% (Ministry of Health, 2019). A report from the International Agency for Research on Cancer (IARC) also shows an increase in the number of cervical cancer cases in Indonesia from 2019 to 2022, particularly among women of reproductive age (IARC, 2023). This situation emphasizes the importance of ongoing efforts to prevent and detect cervical cancer early.

Cervical cancer is largely caused by infection with the Human Papillomavirus (HPV), particularly high-risk types. The disease progresses slowly and is often

asymptomatic in its early stages (Carolin, 2020). Therefore, early detection is a key strategy in reducing morbidity and mortality from cervical cancer. One recommended screening method that can be implemented in primary healthcare facilities is Visual Inspection with Acetic Acid (VIA). The VIA method is considered effective, simple, and relatively low-cost compared to other screening methods, making it suitable for implementation in community health centers (Gianyar District Health Office, 2022; Pont et al., 2022).

Despite the availability of VIA screening services, cervical cancer screening coverage in Indonesia remains relatively low. Various studies have shown that low participation of women of childbearing age (WUS) in VIA screening is influenced by several factors, including lack of knowledge, embarrassment, fear of pain, and the perception that screening is only necessary when symptoms arise (Rafikasari, 2019; Norfitri et al., 2023). This situation suggests that service availability alone is not sufficient to encourage optimal VIA screening behavior.

In Bali Province, Health Office data shows a relatively high number of positive VIA cases in recent years. In 2020, 344 positive VIA cases were reported, with 21 suspected cervical cancer cases, while in 2021, 236 positive VIA cases were found, with 22 suspected cancer cases (Bali Provincial Health Office, 2020; 2021). In 2022, the number of positive VIA cases increased again to 545, with Gianyar Regency having the highest number of cases, with 187 cases (Bali Provincial Health Office, 2022). Payangan Community Health Center was recorded as the community health center with the highest number of positive VIA cases in Gianyar Regency, with 82 cases (Gianyar Regency Health Office, 2022).

Despite this, VIA screening coverage in the Payangan Community Health Center (Puskesmas) area remains low. Data from 2022 showed that of the 5,606 women of childbearing age registered, only 383 (6.8%) had undergone VIA testing (Gianyar Regency Health Office, 2022). This low coverage indicates a gap between the need for early cervical cancer detection and the community's utilization of healthcare services.

From a health behavior perspective, knowledge and motivation are crucial factors in encouraging individuals to take preventive measures. Adequate knowledge about cervical cancer, risk factors, and the benefits of VIA screening can foster a positive understanding and attitude toward early detection (Notoatmodjo, 2018). Furthermore, this knowledge can influence motivation, acting as an internal drive to undergo health screening. Several previous studies have shown a relationship between knowledge levels and the motivation or behavior of women of childbearing age (WUS) in undergoing VIA screening (Sunarti et al., 2018; Sartika, 2020; Realita et al., 2023). However, women of childbearing age still have good knowledge but low motivation to undergo VIA screening, necessitating further study in the context of primary healthcare.

Based on the above description, the low coverage of VIA examinations at the Payangan Community Health Center is not only influenced by the availability of services, but also by cognitive and psychological factors, particularly the knowledge and motivation of women of childbearing age. To date, research specifically examining the relationship between knowledge about cervical cancer and the motivation of women of childbearing age to undergo VIA examinations in the Payangan Community Health Center working area is still limited. Therefore, this study was conducted to analyze the relationship between knowledge about cervical cancer and the motivation of women of childbearing age to undergo Visual Inspection with Acetic Acid (VIA) examinations at the Payangan Community Health Center.

2. THEORETICAL STUDY

Health behavior is the result of a complex process and is influenced by various internal and external factors within the individual. One widely used framework to explain health behavior is the PRECEDE–PROCEED model developed by Lawrence Green. This model explains that health behavior is influenced by three main groups of factors: predisposing factors, enabling factors, and reinforcing factors (Notoatmodjo, 2018).

Predisposing factors are inherent in an individual and shape their initial tendencies toward certain behaviors. These factors include knowledge, attitudes, beliefs, and motivation. Knowledge is a cognitive aspect that plays a crucial role in shaping health behaviors, as it serves as the foundation for individuals to understand a health problem and determine appropriate actions (Notoatmodjo, 2018). In the context of cervical cancer, knowledge encompasses understanding the definition of cervical cancer, its causes, risk

factors, symptoms, and prevention and early detection efforts through Visual Inspection with Acetic Acid (VIA) (Ministry of Health of the Republic of Indonesia, 2015).

Adequate knowledge about cervical cancer and the VIA screening allows women of childbearing age (WUS) to understand the benefits of early detection in preventing the disease from progressing to advanced stages. Several studies have shown that higher levels of knowledge are associated with more positive attitudes and behaviors toward the VIA screening (Sunarti et al., 2018; Sartika, 2020; Widiantari, 2023). Therefore, knowledge is seen as a crucial factor influencing an individual's readiness to accept and utilize cervical cancer screening services.

Motivation is an internal drive that drives individuals to act and maintain a health behavior. Motivation relates to an individual's needs, hopes, and goals for maintaining their health. In the VIA test, motivation is reflected in women's willingness to undergo the test even if they have no symptoms, awareness of the importance of cervical cancer prevention, and readiness for the examination procedure. Previous research has shown that motivation plays a significant role in encouraging women to participate in cervical cancer early detection programs (Sunarti et al., 2018; Pragata, 2019; Norfitri et al., 2023).

In addition to predisposing factors, the PRECEDE–PROCEED model also emphasizes the role of enabling factors, namely factors that facilitate the occurrence of health behaviors. These factors include the availability of health care facilities, access to services, affordability, and the presence of trained health workers (Notoatmodjo, 2018). In the context of VIA screening, enabling factors include the availability of VIA services at community health centers (Puskesmas), easy access to services, and support from the health care system. Without adequate enabling factors, good knowledge and motivation will not necessarily translate into VIA screening behavior.

Furthermore, reinforcing factors play a role in maintaining and strengthening established health behaviors. These factors include family support, particularly from husbands, support from healthcare professionals, and the influence of the social environment. Positive social support can increase women's confidence and sustainability in routinely undergoing VIA screening (Norfitri et al., 2023).

Based on theoretical studies and previous research, knowledge and motivation are two important components in shaping VIA screening behavior in women of childbearing age. Knowledge serves as a cognitive foundation that shapes an individual's understanding and perception, while motivation serves as an internal drive that determines an individual's readiness to act. Therefore, this study focuses on the relationship between knowledge about cervical cancer and the motivation of women of childbearing age to undergo VIA screening at the Payangan Community Health Center.

Based on the theoretical framework, the research hypothesis is formulated as follows: Null hypothesis (H0): there is no relationship between knowledge about cervical cancer and the motivation of women of childbearing age to undergo IVA examination. Alternative hypothesis (Ha): there is a relationship between knowledge about cervical cancer and the motivation of women of childbearing age to undergo IVA examination.

3. RESEARCH METHODS

This research is an analytical study using a *cross-sectional design* conducted at the Payangan Community Health Center, Gianyar Regency in 2024. The sampling technique used the *consecutive sampling method* with the research subjects being women of childbearing age at the Payangan Community Health Center, Gianyar Regency. The minimum number of samples determined using the Lemeshow formula was 105 people. All samples were selected based on inclusion and exclusion criteria. The inclusion criteria are: (1) Women who are sexually active, (2) Willing to be research respondents. Exclusion criteria: (1) Pregnant women, (2) Women who cannot read and write.

The variables to be studied are knowledge about cervical cancer and the motivation of women of childbearing age (WUS) in undergoing VIA examination. Data were collected using a questionnaire that had been tested for validity and reliability. The knowledge questionnaire contained 31 questions about cervical cancer and 22 questions about motivation to undergo VIA examination. This study used chi-square data analysis with a 95% *confidence interval* ($\alpha = 0.05$). To analyze the data between the relationship between

knowledge and motivation of women of childbearing age (WUS) regarding cervical cancer and VIA examination, univariate and bivariate analyses were performed.

4. RESULTS AND DISCUSSION

4.1 H results

Table 1. Characteristics of Women of Childbearing Age at Payangan Community Health Center

Characteristics	Frequency (n)	Percentage (%)
Age		
21-25 years old	17	16.1
26-30 years old	23	22.0
30-35 years	20	19.0
36-40 years old	18	17.2
40-45 years old	27	25.7
Education		
Higher Education (College)	25	23.8
Middle School (SMA)	62	59.0
Low (elementary, middle school)	18	17.2
Work		
Student	1	0.95
Self-employed	80	76.15
civil servant	1	0.95
Farmer	1	0.95
Housewife	22	21.0

Table 1 shows that 27 (25.7%) respondents were mostly aged 40-45 years, with the majority having a high school education (62 (59%), however, the majority of respondents were self-employed (80 (76.15%).

Table 2. Distribution of Knowledge of Women of Childbearing Age About Cervical Cancer at Payangan Community Health Center

Knowledge Respondents	Frequency (n)	Percentage (%)
Good	65	61.9
Enough	36	34.3
Not enough	4	3.8
Total	105	100.0

Table 2 shows that 4 respondents (3.8%) had insufficient knowledge, 36 respondents (34.3%) had sufficient knowledge, and 65 respondents (61.9%) had good knowledge. The knowledge questionnaire included 31 questions related to the definition, causes, risk factors, symptoms, prevention, detection, development, and treatment of cervical cancer. More than 80% of respondents understood the definition, causes, risks, symptoms, and prevention of cervical cancer. This study shows that there is still a lack of understanding regarding the causes, symptoms, early detection of VIA, and the risk of cervical cancer. As many as 87.6% of respondents mistakenly understood that all types of HPV can cause cervical cancer, and 53.3% believed that the VIA test was expensive. Misunderstandings were also found regarding the development of the disease (66.7%), early symptoms (85.7%), and risk factors (54.3%).

Table 3. Distribution of Motivation of Women of Childbearing Age at Payangan Community Health Center About Cervical Cancer

Motivation Respondents	Frequency (n)	Percentage (%)
Good	50	47.6
Not enough	55	52.4
Total	105	100.0

Table 3 shows that 50 respondents (47.6%) had good motivation, while 55 respondents (55.2%) had poor motivation. The majority of women of childbearing age (WUS) at the Payangan Community Health Center (Puskesmas) had good motivation to undergo VIA, with more than 70% of respondents agreeing with most of the positive statements regarding awareness and early detection of cervical cancer. However, there were still obstacles, such as fear (77.1%), reluctance if there were no complaints (62.9%), and laziness (52.4%), which hindered the implementation of VIA examinations. Family support, understanding the importance of routine examinations, and the desire to maintain reproductive health were the main driving factors in increasing the motivation of women of childbearing age.

Table 4. Results of Bivariate Test of Knowledge about Cervical Cancer with Motivation to Undergo IVA Examination

Level Knowledge	n	Motivation		p Value
		Good (%)	Not enough (%)	
Good	65	36 (55.4)	29 (44.6)	0.043
Enough	36	14 (38.9)	22 (61.1)	
Not enough	4	0 (0)	4 (100.0)	
Total	105	50 (47.7)	55 (52.3)	

The results of the chi-square test show that the p-value is 0.043 < 0.05, so it can be concluded that there is a relationship between knowledge about cervical cancer and the motivation of women of childbearing age (WUS) in conducting VIA examinations. Based on Table 4, it can be concluded that of the 65 respondents with good knowledge about cervical cancer, there are 36 people with good motivation. It is known that of the 36 respondents with sufficient knowledge about cervical cancer, there are 22 with insufficient motivation, while of the 4 respondents with insufficient knowledge also have insufficient motivation.

4.2 Discussion

Based on age characteristics, most respondents at the Payangan Community Health Center were in the 40-45 year age range. This is in line with research conducted by Sartika (2020)which states that increasing age can increase their knowledge, including regarding cervical cancer and VIA examinations (Ministry of Health of the Republic of Indonesia, 2016) . The majority of respondents had a secondary school level or above (SMA) 62 people, had good and sufficient knowledge about cervical cancer. This is in line with research by Realita (2023) which states that the higher a person's education level, the easier it is for them to receive information, which means their knowledge is broader (Realita, 2023). In addition, most respondents work as self-employed, and this job also provides more access to information that expands respondents' knowledge about health.

The majority of women of childbearing age (WUS) have good knowledge about cervical cancer, but there is still a lack of understanding regarding the etiology, symptoms, early detection, and development of cervical cancer. This can affect the attitudes of women of childbearing age. Knowledge and behavior are interconnected aspects. These results are in line with research by Widiantari (2023) which states that the level of knowledge and behavior in conducting VIA examinations are interrelated (Widiantari, 2023). Good knowledge regarding the definition, causes, and prevention can encourage women of

childbearing age to undergo VIA examinations to prevent cervical cancer (Ministry of Health of the Republic of Indonesia, 2015). Women of childbearing age who receive information about VIA examinations have a greater chance of undergoing the examination. (Ministry of Health of the Republic of Indonesia, 2016) Increasing knowledge about cervical cancer and VIA can improve their attitudes and behavior in cervical cancer prevention.

Motivation is an internal drive that drives a person to act or behave. Research at the Payangan Community Health Center showed that of 105 respondents, 47.6% had good motivation and 52.4% had low motivation. Internal factors influencing motivation included personal desire (81%), reproductive health awareness (71.4%), and cervical cancer prevention (75.2%). External factors included family support (86.7%), husband's recommendation (59%), and affordability (83.3%). These results align with research conducted by Norfitri (2023)stated that support from family, health workers, and friends was related to behavior in undergoing VIA testing. However, 47.6% of respondents were only willing to undergo testing if forced, and 53.3% had never undergone a VIA test.

Knowledge influences a person's health behavior that emerges after an individual understands a particular object. Motivation arises from the need to achieve goals and needs to be managed to suit needs. According to the results of research conducted at the Payangan Community Health Center, it was found that the p-value was $0.043 < 0.05$, so it can be concluded that there is a relationship between knowledge about cervical cancer and the motivation of WUS in conducting VIA examinations. Of the 36 WUS with good knowledge, the majority had good motivation, while those with less knowledge had lower motivation. The results of research in various locations such as the Koja and Denggen District Health Centers also support a significant relationship between knowledge and motivation with a p-value < 0.05. WUS with good knowledge tend to be more motivated to conduct VIA examinations, because they understand the purpose of the examination (Sunarti, et.al., 2018). Another study by the Sartika (2020)Denggen Community Health Center also found a relationship between the level of knowledge and motivation of mothers in conducting VIA examinations, with a significant value of $0.031 < 0.05$. [16]

Research conducted by Pragata (2019) found that 84.4% of WUS in Bejaten Village had good knowledge, and 65.6% of them had high motivation (Pragata, 2019). The results of statistical analysis showed a p-value of 0.025, which confirms a strong relationship between knowledge and motivation. [12] This explanation is in line with the theory put forward by Notoatmodjo (2018)which states that knowledge or cognitive aspects are important domains in forming a person's actions (Notoadmojo, 2019). Another study by Norfitri (2023) also found a significant relationship with a p-value of 0.04. Motivation is the drive for someone to care more about their health by participating in health programs, including early detection of cervical cancer using the IVA method (Sunarti, et.al., 2018). Women of childbearing age who have high motivation to carry out early detection of cervical cancer using the IVA method are expected to be willing to undergo IVA examinations regularly, so that their cervical health condition can be properly monitored. This study has limitations because the findings only represent conditions in the Payangan Community Health Center work area, so they cannot be generalized to other areas.

5. CONCLUSION AND SUGGESTIONS

Based on the results of research conducted at the Payangan Community Health Center, it can be concluded that the majority of women of childbearing age (WUS) have a relatively good level of knowledge regarding cervical cancer and Visual Inspection with Acetic Acid (VIA) examinations. However, more than half of the respondents showed a low level of motivation to undergo VIA examinations. This finding indicates a gap between knowledge and internal motivation for preventive behavior. In addition, the analysis results show a relationship between the level of knowledge and the motivation of WUS in undergoing VIA examinations, which suggests that knowledge plays an important role in shaping motivation, although it is not yet fully capable of driving optimal examination actions.

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